SEQUENCE LISTING

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<120> NPC1L1 (NPC3) AND METHODS OF USE THEREOF

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<150> 60/397,442

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<150> 10/621,758

<151> 2003-07-17

<150> 10/646,301

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<160> 50

<170> PatentIn version 3.1

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Met Ala Ala Ala Trp Leu Gly Trp Leu Leu Trp Ala Leu Leu Leu Ser
1               5                  10                  15

gcg gcc cag ggt gag cta tac aca ccc aaa cac gaa gct ggg gtc tgc       96
Ala Ala Gln Gly Glu Leu Tyr Thr Pro Lys His Glu Ala Gly Val Cys
            20                  25                  30

acc ttt tac gaa gag tgc ggg aaa aac cca gag ctc tct gga ggc ctc      144
Thr Phe Tyr Glu Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Gly Leu
        35                  40                  45

acg tca cta tcc aat gta tcc tgc ctg tct aac acc ccg gcc cgc cac      192
Thr Ser Leu Ser Asn Val Ser Cys Leu Ser Asn Thr Pro Ala Arg His
    50                  55                  60

gtc acg ggt gaa cac ctg gct ctt ctc cag cgc atc tgt ccc cgc ctg      240
Val Thr Gly Glu His Leu Ala Leu Leu Gln Arg Ile Cys Pro Arg Leu
65                  70                  75                  80

tac aac ggc ccc aat acc act ttt gcc tgt tgc tct acc aag cag ctg      288
Tyr Asn Gly Pro Asn Thr Thr Phe Ala Cys Cys Ser Thr Lys Gln Leu
                85                  90                  95

ctg tcc tta gaa agc agc atg tcc atc acc aag gcc ctt ctc acg cgc      336
Leu Ser Leu Glu Ser Ser Met Ser Ile Thr Lys Ala Leu Leu Thr Arg
            100                 105                 110

tgc ccg gcc tgc tct gac aat ttt gtg agc tta cac tgc cac aac act      384
Cys Pro Ala Cys Ser Asp Asn Phe Val Ser Leu His Cys His Asn Thr
        115                 120                 125

tgc agc cct gac cag agc ctc ttc atc aac gtc acc cgg gtg gtt gag      432
Cys Ser Pro Asp Gln Ser Leu Phe Ile Asn Val Thr Arg Val Val Glu
    130                 135                 140

cgg ggc gct gga gag cct cct gcc gtg gtg gcc tat gag gcc ttt tat      480
Arg Gly Ala Gly Glu Pro Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr
145                 150                 155                 160

cag cgc agc ttt gct gag aag gcc tat gag tcc tgc agc cag gtg cgc      528
Gln Arg Ser Phe Ala Glu Lys Ala Tyr Glu Ser Cys Ser Gln Val Arg
                165                 170                 175

atc cct gcg gcc gct tcc ttg gcc gtg ggc agc atg tgt gga gtg tat      576
Ile Pro Ala Ala Ala Ser Leu Ala Val Gly Ser Met Cys Gly Val Tyr
            180                 185                 190

ggc tcc gcc ctc tgc aat gct cag cgc tgg ctc aac ttc caa gga gac      624
Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp
        195                 200                 205

aca ggg aat ggc ctg gct ccg ctg gat atc acc ttc cac ctc ttg gag      672
Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu
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cct ggc cag gcc cta ccg gat ggg atc cag cca ctg aat ggg aag atc      720
Pro Gly Gln Ala Leu Pro Asp Gly Ile Gln Pro Leu Asn Gly Lys Ile
225                 230                 235                 240

gca ccc tgc aac gag tct cag ggt gat gac tca gca gtc tgc tcc tgc      768
Ala Pro Cys Asn Glu Ser Gln Gly Asp Asp Ser Ala Val Cys Ser Cys
                245                 250                 255

cag gac tgt gcg gcg tcc tgc cct gtc atc cct ccg ccc gag gcc ttg      816
Gln Asp Cys Ala Ala Ser Cys Pro Val Ile Pro Pro Pro Glu Ala Leu
            260                 265                 270

cgc cct tcc ttc tac atg ggt cgc atg cca ggc tgg ctg gcc ctc atc      864
Arg Pro Ser Phe Tyr Met Gly Arg Met Pro Gly Trp Leu Ala Leu Ile
        275                 280                 285

atc atc ttc act gct gtc ttt gtg ttg ctc tct gca gtc ctt gtg cgt      912
Ile Ile Phe Thr Ala Val Phe Val Leu Leu Ser Ala Val Leu Val Arg
    290                 295                 300

ctc cga gtg gtt tcc aac agg aac aag aac aag gca gaa ggc ccc cag      960
Leu Arg Val Val Ser Asn Arg Asn Lys Asn Lys Ala Glu Gly Pro Gln
305                 310                 315                 320

gaa gcc ccc aaa ctc cct cat aag cac aaa ctc tca ccc cat acc atc     1008
Glu Ala Pro Lys Leu Pro His Lys His Lys Leu Ser Pro His Thr Ile
                325                 330                 335

ctg ggc cgg ttc ttc cag aac tgg ggc aca agg gtg gcc tcg tgg cca     1056
Leu Gly Arg Phe Phe Gln Asn Trp Gly Thr Arg Val Ala Ser Trp Pro
            340                 345                 350

ctc acc gtc tta gca ctg tcc ttc atc gtt gtg ata gcc tta gca gca     1104
Leu Thr Val Leu Ala Leu Ser Phe Ile Val Val Ile Ala Leu Ala Ala
        355                 360                 365

ggc ctg acc ttt att gaa ctc acc aca gac cct gtg gaa ctg tgg tcg     1152
Gly Leu Thr Phe Ile Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser
    370                 375                 380

gcc ccc aag agc cag gcc cgg aaa gag aag tct ttc cat gat gag cat     1200
Ala Pro Lys Ser Gln Ala Arg Lys Glu Lys Ser Phe His Asp Glu His
385                 390                 395                 400

ttc ggc ccc ttc ttt cga acc aac cag att ttc gtg aca gct cgg aac     1248
Phe Gly Pro Phe Phe Arg Thr Asn Gln Ile Phe Val Thr Ala Arg Asn
                405                 410                 415

agg tcc agc tac aag tac gac tcc cta ctg cta ggg tcc aag aac ttc     1296
Arg Ser Ser Tyr Lys Tyr Asp Ser Leu Leu Leu Gly Ser Lys Asn Phe
            420                 425                 430

agt ggg atc ctg tcc ctg gac ttc ctg ctg gag ctg ctg gag ctt cag     1344
Ser Gly Ile Leu Ser Leu Asp Phe Leu Leu Glu Leu Leu Glu Leu Gln
        435                 440                 445

gag agg ctt cga cac ctg caa gtg tgg tcc cct gag gca gag cgc aac     1392
Glu Arg Leu Arg His Leu Gln Val Trp Ser Pro Glu Ala Glu Arg Asn
    450                 455                 460
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atc tcc ctc cag gac atc tgc tat gcc ccc ctc aac cca tat aac acc     1440
Ile Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro Tyr Asn Thr
465                 470                 475                 480

agc ctc tcc gac tgc tgt gtc aac agc ctc ctt cag tac ttc cag aac     1488
Ser Leu Ser Asp Cys Cys Val Asn Ser Leu Leu Gln Tyr Phe Gln Asn
                485                 490                 495

aac cgc acc ctc ctg atg ctc acg gcc aac cag act ctg aat ggc cag     1536
Asn Arg Thr Leu Leu Met Leu Thr Ala Asn Gln Thr Leu Asn Gly Gln
            500                 505                 510

acc tcc ctg gtg gac tgg aag gac cat ttc ctc tac tgt gca aat gcc     1584
Thr Ser Leu Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala
        515                 520                 525

cct ctc acg ttc aaa gat ggc acg tct ctg gcc ctg agc tgc atg gct     1632
Pro Leu Thr Phe Lys Asp Gly Thr Ser Leu Ala Leu Ser Cys Met Ala
    530                 535                 540

gac tac ggg gct cct gtc ttc ccc ttc ctt gct gtt ggg gga tac caa     1680
Asp Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Val Gly Gly Tyr Gln
545                 550                 555                 560

ggc acg gac tat tcc gag gca gaa gcg ctg atc ata acc ttc tct ctc     1728
Gly Thr Asp Tyr Ser Glu Ala Glu Ala Leu Ile Ile Thr Phe Ser Leu
                565                 570                 575

aat aac tac ccc gct gat gat ccc cgc atg gcc cag gcc aag ctc tgg     1776
Asn Asn Tyr Pro Ala Asp Asp Pro Arg Met Ala Gln Ala Lys Leu Trp
            580                 585                 590

gag gag gct ttc ttg aag gaa atg gaa tcc ttc cag agg aac aca agt     1824
Glu Glu Ala Phe Leu Lys Glu Met Glu Ser Phe Gln Arg Asn Thr Ser
        595                 600                 605

gac aag ttc cag gtt gcg ttc tca gct gag cgc tct ctg gag gat gag     1872
Asp Lys Phe Gln Val Ala Phe Ser Ala Glu Arg Ser Leu Glu Asp Glu
    610                 615                 620

atc aac cgc acc acc atc cag gac ctg cct gtc ttt gcc gtc agc tac     1920
Ile Asn Arg Thr Thr Ile Gln Asp Leu Pro Val Phe Ala Val Ser Tyr
625                 630                 635                 640

att atc gtc ttc ctg tac atc tcc ctg gcc ctg ggc agc tac tcc aga     1968
Ile Ile Val Phe Leu Tyr Ile Ser Leu Ala Leu Gly Ser Tyr Ser Arg
                645                 650                 655

tgc agc cga gta gcg gtg gag tcc aag gct act ctg ggc cta ggt ggg     2016
Cys Ser Arg Val Ala Val Glu Ser Lys Ala Thr Leu Gly Leu Gly Gly
            660                 665                 670

gtg att gtt gtg ctg gga gca gtt ctg gct gcc atg ggc ttc tac tcc     2064
Val Ile Val Val Leu Gly Ala Val Leu Ala Ala Met Gly Phe Tyr Ser
        675                 680                 685

tac ctg ggt gtc ccc tct tct ctg gtt atc atc caa gtg gta cct ttc     2112
Tyr Leu Gly Val Pro Ser Ser Leu Val Ile Ile Gln Val Val Pro Phe
    690                 695                 700
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ctg gtg cta gct gtg gga gct gac aac atc ttc atc ttt gtt ctt gag     2160
Leu Val Leu Ala Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu
705                 710                 715                 720

tac cag agg cta cct agg atg cct ggg gaa cag cga gag gct cac att     2208
Tyr Gln Arg Leu Pro Arg Met Pro Gly Glu Gln Arg Glu Ala His Ile
                725                 730                 735

ggc cgc acc ctg ggc agt gtg gcc ccc agc atg ctg ctg tgc agc ctc     2256
Gly Arg Thr Leu Gly Ser Val Ala Pro Ser Met Leu Leu Cys Ser Leu
            740                 745                 750

tct gag gcc atc tgc ttc ttt cta ggg gcc ctg acc ccc atg cca gct     2304
Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Pro Met Pro Ala
        755                 760                 765

gtg agg acc ttc gcc ttg acc tct ggc tta gca att atc ctc gac ttc     2352
Val Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Ile Ile Leu Asp Phe
    770                 775                 780

ctg ctc cag atg act gcc ttt gtg gcc ctg ctc tcc ctg gat agc aag     2400
Leu Leu Gln Met Thr Ala Phe Val Ala Leu Leu Ser Leu Asp Ser Lys
785                 790                 795                 800

agg cag gag gcc tct cgc ccg gat gtc tta tgc tgc ttt tca acc cgg     2448
Arg Gln Glu Ala Ser Arg Pro Asp Val Leu Cys Cys Phe Ser Thr Arg
                805                 810                 815

aag ctg ccc cca cct aaa gaa aaa gaa ggc ctc tta ctc cgc ttc ttc     2496
Lys Leu Pro Pro Pro Lys Glu Lys Glu Gly Leu Leu Leu Arg Phe Phe
            820                 825                 830

cgc aag ata tac gct cct ttc ctg ctg cac aga ttc atc cgc cct gtt     2544
Arg Lys Ile Tyr Ala Pro Phe Leu Leu His Arg Phe Ile Arg Pro Val
        835                 840                 845

gtg atg ctg ctg ttt ctg acc ctg ttt gga gca aat ctc tac tta atg     2592
Val Met Leu Leu Phe Leu Thr Leu Phe Gly Ala Asn Leu Tyr Leu Met
    850                 855                 860

tgc aac atc aac gtg ggg cta gac cag gag ctg gct ctg ccc aag gac     2640
Cys Asn Ile Asn Val Gly Leu Asp Gln Glu Leu Ala Leu Pro Lys Asp
865                 870                 875                 880

tcg tac ttg ata gac tac ttc ctc ttt ctg aac cga tac ctt gaa gtg     2688
Ser Tyr Leu Ile Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Leu Glu Val
                885                 890                 895

ggg cct cca gtg tac ttt gtc acc acc tcg ggc ttc aac ttc tcc agc     2736
Gly Pro Pro Val Tyr Phe Val Thr Thr Ser Gly Phe Asn Phe Ser Ser
            900                 905                 910

gag gca ggc atg aac gcc act tgc tct agc gca ggc tgt aag agc ttc     2784
Glu Ala Gly Met Asn Ala Thr Cys Ser Ser Ala Gly Cys Lys Ser Phe
        915                 920                 925

tcc cta acc cag aaa atc cag tat gcc agt gaa ttc cct gac cag tct     2832
Ser Leu Thr Gln Lys Ile Gln Tyr Ala Ser Glu Phe Pro Asp Gln Ser
    930                 935                 940

tac gtg gct att gct gca tcc tcc tgg gta gat gac ttc atc gac tgg     2880
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Tyr Val Ala Ile Ala Ala Ser Ser Trp Val Asp Asp Phe Ile Asp Trp
945                 950                 955                 960

ctg acc ccg tcc tcc tcc tgc tgt cgc ctt tat ata cgt ggc ccc cat     2928
Leu Thr Pro Ser Ser Ser Cys Cys Arg Leu Tyr Ile Arg Gly Pro His
                965                 970                 975

aag gat gag ttc tgt ccc tca acg gat act tcc ttc aac tgc tta aaa     2976
Lys Asp Glu Phe Cys Pro Ser Thr Asp Thr Ser Phe Asn Cys Leu Lys
            980                 985                 990

aac tgc atg aac cgc act ctg ggt  cct gtg agg ccc aca  gcg gaa cag   3024
Asn Cys Met Asn Arg Thr Leu Gly  Pro Val Arg Pro Thr  Ala Glu Gln
        995                 1000                1005

ttt cat  aag tac ctg ccc tgg  ttc ctg aat gat ccg  ccc aat atc      3069
Phe His  Lys Tyr Leu Pro Trp  Phe Leu Asn Asp Pro  Pro Asn Ile
    1010                1015                1020

aga tgt  ccc aaa ggg ggt cta  gca gcg tat aga acg  tct gtg aat      3114
Arg Cys  Pro Lys Gly Gly Leu  Ala Ala Tyr Arg Thr  Ser Val Asn
    1025                1030                1035

ttg agc  tca gat ggc cag gtt  ata gcc tcc cag ttc  atg gcc tac      3159
Leu Ser  Ser Asp Gly Gln Val  Ile Ala Ser Gln Phe  Met Ala Tyr
    1040                1045                1050

cac aag  ccc tta agg aac tca  cag gac ttc aca gaa  gct ctc cgg      3204
His Lys  Pro Leu Arg Asn Ser  Gln Asp Phe Thr Glu  Ala Leu Arg
    1055                1060                1065

gcg tcc  cgg ttg cta gca gcc  aac atc aca gct gac  cta cgg aag      3249
Ala Ser  Arg Leu Leu Ala Ala  Asn Ile Thr Ala Asp  Leu Arg Lys
    1070                1075                1080

gtg cct  ggg aca gat cca aac  ttt gag gtc ttc cct  tac acg atc      3294
Val Pro  Gly Thr Asp Pro Asn  Phe Glu Val Phe Pro  Tyr Thr Ile
    1085                1090                1095

tcc aac  gtg ttc tac cag caa  tac ctg acg gtc ctt  cct gag gga      3339
Ser Asn  Val Phe Tyr Gln Gln  Tyr Leu Thr Val Leu  Pro Glu Gly
    1100                1105                1110

atc ttc  acc ctt gct ctt tgc  ttt gtg ccc acc ttt  gtt gtc tgc      3384
Ile Phe  Thr Leu Ala Leu Cys  Phe Val Pro Thr Phe  Val Val Cys
    1115                1120                1125

tac ctc  cta ctg ggc ctg gac  atg tgc tca ggg atc  ctc aac cta      3429
Tyr Leu  Leu Leu Gly Leu Asp  Met Cys Ser Gly Ile  Leu Asn Leu
    1130                1135                1140

ctc tcc  atc att atg att ctc  gtg gac acc att ggc  ctc atg gct      3474
Leu Ser  Ile Ile Met Ile Leu  Val Asp Thr Ile Gly  Leu Met Ala
    1145                1150                1155

gtg tgg  ggt atc agc tat aat  gcg gta tcc ctc atc  aac ctt gtc      3519
Val Trp  Gly Ile Ser Tyr Asn  Ala Val Ser Leu Ile  Asn Leu Val
    1160                1165                1170

acg gca  gtg ggc atg tct gtg  gag ttt gtg tcc cac  atc act cgg      3564
Thr Ala  Val Gly Met Ser Val  Glu Phe Val Ser His  Ile Thr Arg
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    1175                1180                1185

tcc ttt  gct gta agc acc aag  cct acc cgg ctg gag  agg gct aaa      3609
Ser Phe  Ala Val Ser Thr Lys  Pro Thr Arg Leu Glu  Arg Ala Lys
    1190                1195                1200

gat gct  act gtc ttc atg ggc  agt gcg gtg ttt gct  gga gtg gcc      3654
Asp Ala  Thr Val Phe Met Gly  Ser Ala Val Phe Ala  Gly Val Ala
    1205                1210                1215

atg acc  aac ttc cca ggc atc  ctc atc ttg ggc ttt  gcc caa gcc      3699
Met Thr  Asn Phe Pro Gly Ile  Leu Ile Leu Gly Phe  Ala Gln Ala
    1220                1225                1230

cag ctt  att cag atc ttc ttc  ttc cgc ctc aac ctt  ctg atc acc      3744
Gln Leu  Ile Gln Ile Phe Phe  Phe Arg Leu Asn Leu  Leu Ile Thr
    1235                1240                1245

ttg ctg  ggt ctg ctg cat ggc  ctg gtc ttc ctg ccg  gtt gtc ctc      3789
Leu Leu  Gly Leu Leu His Gly  Leu Val Phe Leu Pro  Val Val Leu
    1250                1255                1260

agc tat  ctg gga cca gat gtt  aac caa gct ctg gta  cag gag gag      3834
Ser Tyr  Leu Gly Pro Asp Val  Asn Gln Ala Leu Val  Gln Glu Glu
    1265                1270                1275

aaa cta  gcc agc gag gca gca  gtg gcc cca gag cct  tct tgc cca      3879
Lys Leu  Ala Ser Glu Ala Ala  Val Ala Pro Glu Pro  Ser Cys Pro
    1280                1285                1290

cag tac  ccc tcc cct gct gat  gcg gat gcc aat gtt  aac tac ggc      3924
Gln Tyr  Pro Ser Pro Ala Asp  Ala Asp Ala Asn Val  Asn Tyr Gly
    1295                1300                1305

ttt gcc  cca gaa ctt gcc cac  gga gct aat gct gct  aga agc tct      3969
Phe Ala  Pro Glu Leu Ala His  Gly Ala Asn Ala Ala  Arg Ser Ser
    1310                1315                1320

ttg ccc  aaa agt gac caa aag  ttc taa                            3996
Leu Pro  Lys Ser Asp Gln Lys  Phe
    1325                1330
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            20                  25                  30
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Thr Phe Tyr Glu Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Gly Leu
35 40 45

Thr Ser Leu Ser Asn Val Ser Cys Leu Ser Asn Thr Pro Ala Arg His
50 55 60

Val Thr Gly Glu His Leu Ala Leu Leu Gln Arg Ile Cys Pro Arg Leu
65 70 75 80

Tyr Asn Gly Pro Asn Thr Thr Phe Ala Cys Cys Ser Thr Lys Gln Leu
85 90 95

Leu Ser Leu Glu Ser Ser Met Ser Ile Thr Lys Ala Leu Leu Thr Arg
100 105 110

Cys Pro Ala Cys Ser Asp Asn Phe Val Ser Leu His Cys His Asn Thr
115 120 125

Cys Ser Pro Asp Gln Ser Leu Phe Ile Asn Val Thr Arg Val Val Glu
130 135 140

Arg Gly Ala Gly Glu Pro Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr
145 150 155 160

Gln Arg Ser Phe Ala Glu Lys Ala Tyr Glu Ser Cys Ser Gln Val Arg
165 170 175

Ile Pro Ala Ala Ala Ser Leu Ala Val Gly Ser Met Cys Gly Val Tyr
180 185 190

Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp
195 200 205

Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu
210 215 220

Pro Gly Gln Ala Leu Pro Asp Gly Ile Gln Pro Leu Asn Gly Lys Ile
225 230 235 240

Ala Pro Cys Asn Glu Ser Gln Gly Asp Asp Ser Ala Val Cys Ser Cys
245 250 255

Gln Asp Cys Ala Ala Ser Cys Pro Val Ile Pro Pro Pro Glu Ala Leu
260 265 270

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Arg Pro Ser Phe Tyr Met Gly Arg Met Pro Gly Trp Leu Ala Leu Ile
        275                 280                 285

Ile Ile Phe Thr Ala Val Phe Val Leu Leu Ser Ala Val Leu Val Arg
    290                 295                 300

Leu Arg Val Val Ser Asn Arg Asn Lys Asn Lys Ala Glu Gly Pro Gln
305                 310                 315                 320

Glu Ala Pro Lys Leu Pro His Lys His Lys Leu Ser Pro His Thr Ile
                325                 330                 335

Leu Gly Arg Phe Phe Gln Asn Trp Gly Thr Arg Val Ala Ser Trp Pro
            340                 345                 350

Leu Thr Val Leu Ala Leu Ser Phe Ile Val Val Ile Ala Leu Ala Ala
        355                 360                 365

Gly Leu Thr Phe Ile Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser
    370                 375                 380

Ala Pro Lys Ser Gln Ala Arg Lys Glu Lys Ser Phe His Asp Glu His
385                 390                 395                 400

Phe Gly Pro Phe Phe Arg Thr Asn Gln Ile Phe Val Thr Ala Arg Asn
                405                 410                 415

Arg Ser Ser Tyr Lys Tyr Asp Ser Leu Leu Leu Gly Ser Lys Asn Phe
            420                 425                 430

Ser Gly Ile Leu Ser Leu Asp Phe Leu Leu Glu Leu Leu Glu Leu Gln
        435                 440                 445

Glu Arg Leu Arg His Leu Gln Val Trp Ser Pro Glu Ala Glu Arg Asn
    450                 455                 460

Ile Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro Tyr Asn Thr
465                 470                 475                 480

Ser Leu Ser Asp Cys Cys Val Asn Ser Leu Leu Gln Tyr Phe Gln Asn
                485                 490                 495

Asn Arg Thr Leu Leu Met Leu Thr Ala Asn Gln Thr Leu Asn Gly Gln
            500                 505                 510
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Thr Ser Leu Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala
515 520 525

Pro Leu Thr Phe Lys Asp Gly Thr Ser Leu Ala Leu Ser Cys Met Ala
530 535 540

Asp Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Val Gly Gly Tyr Gln
545 550 555 560

Gly Thr Asp Tyr Ser Glu Ala Glu Ala Leu Ile Ile Thr Phe Ser Leu
565 570 575

Asn Asn Tyr Pro Ala Asp Asp Pro Arg Met Ala Gln Ala Lys Leu Trp
580 585 590

Glu Glu Ala Phe Leu Lys Glu Met Glu Ser Phe Gln Arg Asn Thr Ser
595 600 605

Asp Lys Phe Gln Val Ala Phe Ser Ala Glu Arg Ser Leu Glu Asp Glu
610 615 620

Ile Asn Arg Thr Thr Ile Gln Asp Leu Pro Val Phe Ala Val Ser Tyr
625 630 635 640

Ile Ile Val Phe Leu Tyr Ile Ser Leu Ala Leu Gly Ser Tyr Ser Arg
645 650 655

Cys Ser Arg Val Ala Val Glu Ser Lys Ala Thr Leu Gly Leu Gly Gly
660 665 670

Val Ile Val Val Leu Gly Ala Val Leu Ala Ala Met Gly Phe Tyr Ser
675 680 685

Tyr Leu Gly Val Pro Ser Ser Leu Val Ile Ile Gln Val Val Pro Phe
690 695 700

Leu Val Leu Ala Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu
705 710 715 720

Tyr Gln Arg Leu Pro Arg Met Pro Gly Glu Gln Arg Glu Ala His Ile
725 730 735

Gly Arg Thr Leu Gly Ser Val Ala Pro Ser Met Leu Leu Cys Ser Leu
740 745 750

Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Pro Met Pro Ala

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        755                 760                 765

Val Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Ile Ile Leu Asp Phe
    770                 775                 780

Leu Leu Gln Met Thr Ala Phe Val Ala Leu Leu Ser Leu Asp Ser Lys
785                 790                 795                 800

Arg Gln Glu Ala Ser Arg Pro Asp Val Leu Cys Cys Phe Ser Thr Arg
                805                 810                 815

Lys Leu Pro Pro Pro Lys Glu Lys Glu Gly Leu Leu Leu Arg Phe Phe
            820                 825                 830

Arg Lys Ile Tyr Ala Pro Phe Leu Leu His Arg Phe Ile Arg Pro Val
        835                 840                 845

Val Met Leu Leu Phe Leu Thr Leu Phe Gly Ala Asn Leu Tyr Leu Met
    850                 855                 860

Cys Asn Ile Asn Val Gly Leu Asp Gln Glu Leu Ala Leu Pro Lys Asp
865                 870                 875                 880

Ser Tyr Leu Ile Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Leu Glu Val
                885                 890                 895

Gly Pro Pro Val Tyr Phe Val Thr Thr Ser Gly Phe Asn Phe Ser Ser
            900                 905                 910

Glu Ala Gly Met Asn Ala Thr Cys Ser Ser Ala Gly Cys Lys Ser Phe
        915                 920                 925

Ser Leu Thr Gln Lys Ile Gln Tyr Ala Ser Glu Phe Pro Asp Gln Ser
    930                 935                 940

Tyr Val Ala Ile Ala Ala Ser Ser Trp Val Asp Asp Phe Ile Asp Trp
945                 950                 955                 960

Leu Thr Pro Ser Ser Ser Cys Cys Arg Leu Tyr Ile Arg Gly Pro His
                965                 970                 975

Lys Asp Glu Phe Cys Pro Ser Thr Asp Thr Ser Phe Asn Cys Leu Lys
            980                 985                 990

Asn Cys Met Asn Arg Thr Leu Gly  Pro Val Arg Pro Thr  Ala Glu Gln
        995                 1000                1005
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Phe His Lys Tyr Leu Pro Trp Phe Leu Asn Asp Pro Pro Asn Ile
1010 1015 1020

Arg Cys Pro Lys Gly Gly Leu Ala Ala Tyr Arg Thr Ser Val Asn
1025 1030 1035

Leu Ser Ser Asp Gly Gln Val Ile Ala Ser Gln Phe Met Ala Tyr
1040 1045 1050

His Lys Pro Leu Arg Asn Ser Gln Asp Phe Thr Glu Ala Leu Arg
1055 1060 1065

Ala Ser Arg Leu Leu Ala Ala Asn Ile Thr Ala Asp Leu Arg Lys
1070 1075 1080

Val Pro Gly Thr Asp Pro Asn Phe Glu Val Phe Pro Tyr Thr Ile
1085 1090 1095

Ser Asn Val Phe Tyr Gln Gln Tyr Leu Thr Val Leu Pro Glu Gly
1100 1105 1110

Ile Phe Thr Leu Ala Leu Cys Phe Val Pro Thr Phe Val Val Cys
1115 1120 1125

Tyr Leu Leu Leu Gly Leu Asp Met Cys Ser Gly Ile Leu Asn Leu
1130 1135 1140

Leu Ser Ile Ile Met Ile Leu Val Asp Thr Ile Gly Leu Met Ala
1145 1150 1155

Val Trp Gly Ile Ser Tyr Asn Ala Val Ser Leu Ile Asn Leu Val
1160 1165 1170

Thr Ala Val Gly Met Ser Val Glu Phe Val Ser His Ile Thr Arg
1175 1180 1185

Ser Phe Ala Val Ser Thr Lys Pro Thr Arg Leu Glu Arg Ala Lys
1190 1195 1200

Asp Ala Thr Val Phe Met Gly Ser Ala Val Phe Ala Gly Val Ala
1205 1210 1215

Met Thr Asn Phe Pro Gly Ile Leu Ile Leu Gly Phe Ala Gln Ala
1220 1225 1230

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Gln Leu  Ile Gln Ile Phe Phe  Phe Arg Leu Asn Leu  Leu Ile Thr
    1235                 1240                 1245

Leu Leu  Gly Leu Leu His Gly  Leu Val Phe Leu Pro  Val Val Leu
    1250                 1255                 1260

Ser Tyr  Leu Gly Pro Asp Val  Asn Gln Ala Leu Val  Gln Glu Glu
    1265                 1270                 1275

Lys Leu  Ala Ser Glu Ala Ala  Val Ala Pro Glu Pro  Ser Cys Pro
    1280                 1285                 1290

Gln Tyr  Pro Ser Pro Ala Asp  Ala Asp Ala Asn Val  Asn Tyr Gly
    1295                 1300                 1305

Phe Ala  Pro Glu Leu Ala His  Gly Ala Asn Ala Ala  Arg Ser Ser
    1310                 1315                 1320

Leu Pro  Lys Ser Asp Gln Lys  Phe
    1325                 1330
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atg gcg gag gcc ggc ctg agg ggc tgg ctg ctg tgg gcc ctg ctc ctg       48
Met Ala Glu Ala Gly Leu Arg Gly Trp Leu Leu Trp Ala Leu Leu Leu
1               5                  10                  15

cgc ttg gcc cag agt gag cct tac aca acc atc cac cag cct ggc tac       96
Arg Leu Ala Gln Ser Glu Pro Tyr Thr Thr Ile His Gln Pro Gly Tyr
            20                  25                  30

tgc gcc ttc tat gac gaa tgt ggg aag aac cca gag ctg tct gga agc      144
Cys Ala Phe Tyr Asp Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Ser
        35                  40                  45
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ctc atg aca ctc tcc aac gtg tcc tgc ctg tcc aac acg ccg gcc cgc      192
Leu Met Thr Leu Ser Asn Val Ser Cys Leu Ser Asn Thr Pro Ala Arg
    50                  55                  60

aag atc aca ggt gat cac ctg atc cta tta cag aag atc tgc ccc cgc      240
Lys Ile Thr Gly Asp His Leu Ile Leu Leu Gln Lys Ile Cys Pro Arg
65                  70                  75                  80

ctc tac acc ggc ccc aac acc caa gcc tgc tgc tcc gcc aag cag ctg      288
Leu Tyr Thr Gly Pro Asn Thr Gln Ala Cys Cys Ser Ala Lys Gln Leu
                85                  90                  95

gta tca ctg gaa gcg agt ctg tcg atc acc aag gcc ctc ctc acc cgc      336
Val Ser Leu Glu Ala Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg
            100                 105                 110

tgc cca gcc tgc tct gac aat ttt gtg aac ctg cac tgc cac aac acg      384
Cys Pro Ala Cys Ser Asp Asn Phe Val Asn Leu His Cys His Asn Thr
        115                 120                 125

tgc agc ccc aat cag agc ctc ttc atc aat gtg acc cgc gtg gcc cag      432
Cys Ser Pro Asn Gln Ser Leu Phe Ile Asn Val Thr Arg Val Ala Gln
    130                 135                 140

cta ggg gct gga caa ctc cca gct gtg gtg gcc tat gag gcc ttc tac      480
Leu Gly Ala Gly Gln Leu Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr
145                 150                 155                 160

cag cat agc ttt gcc gag cag agc tat gac tcc tgc agc cgt gtg cgc      528
Gln His Ser Phe Ala Glu Gln Ser Tyr Asp Ser Cys Ser Arg Val Arg
                165                 170                 175

gtc cct gca gct gcc acg ctg gct gtg ggc acc atg tgt ggc gtg tat      576
Val Pro Ala Ala Ala Thr Leu Ala Val Gly Thr Met Cys Gly Val Tyr
            180                 185                 190

ggc tct gcc ctt tgc aat gcc cag cgc tgg ctc aac ttc cag gga gac      624
Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp
        195                 200                 205

aca ggc aat ggt ctg gcc cca ctg gac atc acc ttc cac ctc ttg gag      672
Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu
    210                 215                 220

cct ggc cag gcc gtg ggg agt ggg att cag cct ctg aat gag ggg gtt      720
Pro Gly Gln Ala Val Gly Ser Gly Ile Gln Pro Leu Asn Glu Gly Val
225                 230                 235                 240

gca cgt tgc aat gag tcc caa ggt gac gac gtg gcg acc tgc tcc tgc      768
Ala Arg Cys Asn Glu Ser Gln Gly Asp Asp Val Ala Thr Cys Ser Cys
                245                 250                 255

caa gac tgt gct gca tcc tgt cct gcc ata gcc cgc ccc cag gcc ctc      816
Gln Asp Cys Ala Ala Ser Cys Pro Ala Ile Ala Arg Pro Gln Ala Leu
            260                 265                 270

gac tcc acc ttc tac ctg ggc cag atg ccg ggc agt ctg gtc ctc atc      864
Asp Ser Thr Phe Tyr Leu Gly Gln Met Pro Gly Ser Leu Val Leu Ile
        275                 280                 285
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atc atc ctc tgc tct gtc ttc gct gtg gtc acc atc ctg ctt gtg gga      912
Ile Ile Leu Cys Ser Val Phe Ala Val Val Thr Ile Leu Leu Val Gly
    290                 295                 300

ttc cgt gtg gcc ccc gcc agg gac aaa agc aag atg gtg gac ccc aag      960
Phe Arg Val Ala Pro Ala Arg Asp Lys Ser Lys Met Val Asp Pro Lys
305                 310                 315                 320

aag ggc acc agc ctc tct gac aag ctc agc ttc tcc acc cac acc ctc     1008
Lys Gly Thr Ser Leu Ser Asp Lys Leu Ser Phe Ser Thr His Thr Leu
                325                 330                 335

ctt ggc cag ttc ttc cag ggc tgg ggc acg tgg gtg gct tcg tgg cct     1056
Leu Gly Gln Phe Phe Gln Gly Trp Gly Thr Trp Val Ala Ser Trp Pro
            340                 345                 350

ctg acc atc ttg gtg cta tct gtc atc ccg gtg gtg gcc ttg gca gcg     1104
Leu Thr Ile Leu Val Leu Ser Val Ile Pro Val Val Ala Leu Ala Ala
        355                 360                 365

ggc ctg gtc ttt aca gaa ctc act acg gac ccc gtg gag ctg tgg tcg     1152
Gly Leu Val Phe Thr Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser
    370                 375                 380

gcc ccc aac agc caa gcc cgg agt gag aaa gct ttc cat gac cag cat     1200
Ala Pro Asn Ser Gln Ala Arg Ser Glu Lys Ala Phe His Asp Gln His
385                 390                 395                 400

ttc ggc ccc ttc ttc cga acc aac cag gtg atc ctg acg gct cct aac     1248
Phe Gly Pro Phe Phe Arg Thr Asn Gln Val Ile Leu Thr Ala Pro Asn
                405                 410                 415

cgg tcc agc tac agg tat gac tct ctg ctg ctg ggg ccc aag aac ttc     1296
Arg Ser Ser Tyr Arg Tyr Asp Ser Leu Leu Leu Gly Pro Lys Asn Phe
            420                 425                 430

agc gga atc ctg gac ctg gac ttg ctg ctg gag ctg cta gag ctg cag     1344
Ser Gly Ile Leu Asp Leu Asp Leu Leu Leu Glu Leu Leu Glu Leu Gln
        435                 440                 445

gag agg ctg cgg cac ctc cag gta tgg tcg ccc gaa gca cag cgc aac     1392
Glu Arg Leu Arg His Leu Gln Val Trp Ser Pro Glu Ala Gln Arg Asn
    450                 455                 460

atc tcc ctg cag gac atc tgc tac gcc ccc ctc aat ccg gac aat acc     1440
Ile Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro Asp Asn Thr
465                 470                 475                 480

agt ctc tac gac tgc tgc atc aac agc ctc ctg cag tat ttc cag aac     1488
Ser Leu Tyr Asp Cys Cys Ile Asn Ser Leu Leu Gln Tyr Phe Gln Asn
                485                 490                 495

aac cgc acg ctc ctg ctg ctc aca gcc aac cag aca ctg atg ggg cag     1536
Asn Arg Thr Leu Leu Leu Leu Thr Ala Asn Gln Thr Leu Met Gly Gln
            500                 505                 510

acc tcc caa gtc gac tgg aag gac cat ttt ctg tac tgt gcc aat gcc     1584
Thr Ser Gln Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala
        515                 520                 525

ccg ctc acc ttc aag gat ggc aca gcc ctg gcc ctg agc tgc atg gct     1632
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Pro Leu Thr Phe Lys Asp Gly Thr Ala Leu Ala Leu Ser Cys Met Ala
    530                 535                 540

gac tac ggg gcc cct gtc ttc ccc ttc ctt gcc att ggg ggg tac aaa     1680
Asp Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Ile Gly Gly Tyr Lys
545                 550                 555                 560

gga aag gac tat tct gag gca gag gcc ctg atc atg acg ttc tcc ctc     1728
Gly Lys Asp Tyr Ser Glu Ala Glu Ala Leu Ile Met Thr Phe Ser Leu
                565                 570                 575

aac aat tac cct gcc ggg gac ccc cgt ctg gcc cag gcc aag ctg tgg     1776
Asn Asn Tyr Pro Ala Gly Asp Pro Arg Leu Ala Gln Ala Lys Leu Trp
            580                 585                 590

gag gag gcc ttc tta gag gaa atg cga gcc ttc cag cgt cgg atg gct     1824
Glu Glu Ala Phe Leu Glu Glu Met Arg Ala Phe Gln Arg Arg Met Ala
        595                 600                 605

ggc atg ttc cag gtc acg ttc acg gct gag cgc tct ctg gaa gac gag     1872
Gly Met Phe Gln Val Thr Phe Thr Ala Glu Arg Ser Leu Glu Asp Glu
    610                 615                 620

atc aat cgc acc aca gct gaa gac ctg ccc atc ttt gcc acc agc tac     1920
Ile Asn Arg Thr Thr Ala Glu Asp Leu Pro Ile Phe Ala Thr Ser Tyr
625                 630                 635                 640

att gtc ata ttc ctg tac atc tct ctg gcc ctg ggc agc tat tcc agc     1968
Ile Val Ile Phe Leu Tyr Ile Ser Leu Ala Leu Gly Ser Tyr Ser Ser
                645                 650                 655

tgg agc cga gtg atg gtg gac tcc aag gcc acg ctg ggc ctc ggc ggg     2016
Trp Ser Arg Val Met Val Asp Ser Lys Ala Thr Leu Gly Leu Gly Gly
            660                 665                 670

gtg gcc gtg gtc ctg gga gca gtc atg gct gcc atg ggc ttc ttc tcc     2064
Val Ala Val Val Leu Gly Ala Val Met Ala Ala Met Gly Phe Phe Ser
        675                 680                 685

tac ttg ggt atc cgc tcc tcc ctg gtc atc ctg caa gtg gtt cct ttc     2112
Tyr Leu Gly Ile Arg Ser Ser Leu Val Ile Leu Gln Val Val Pro Phe
    690                 695                 700

ctg gtg ctg tcc gtg ggg gct gat aac atc ttc atc ttt gtt ctc gag     2160
Leu Val Leu Ser Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu
705                 710                 715                 720

tac cag agg ctg ccc cgg agg cct ggg gag cca cga gag gtc cac att     2208
Tyr Gln Arg Leu Pro Arg Arg Pro Gly Glu Pro Arg Glu Val His Ile
                725                 730                 735

ggg cga gcc cta ggc agg gtg gct ccc agc atg ctg ttg tgc agc ctc     2256
Gly Arg Ala Leu Gly Arg Val Ala Pro Ser Met Leu Leu Cys Ser Leu
            740                 745                 750

tct gag gcc atc tgc ttc ttc cta ggg gcc ctg acc ccc atg cca gct     2304
Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Pro Met Pro Ala
        755                 760                 765

gtg cgg acc ttt gcc ctg acc tct ggc ctt gca gtg atc ctt gac ttc     2352
Val Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Val Ile Leu Asp Phe
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    770                 775                 780

ctc ctg cag atg tca gcc ttt gtg gcc ctg ctc tcc ctg gac agc aag      2400
Leu Leu Gln Met Ser Ala Phe Val Ala Leu Leu Ser Leu Asp Ser Lys
785                 790                 795                 800

agg cag gag gcc tcc cgg ttg gac gtc tgc tgc tgt gtc aag ccc cag      2448
Arg Gln Glu Ala Ser Arg Leu Asp Val Cys Cys Cys Val Lys Pro Gln
                805                 810                 815

gag ctg ccc ccg cct ggc cag gga gag ggg ctc ctg ctt ggc ttc ttc      2496
Glu Leu Pro Pro Pro Gly Gln Gly Glu Gly Leu Leu Leu Gly Phe Phe
            820                 825                 830

caa aag gct tat gcc ccc ttc ctg ctg cac tgg atc act cga ggt gtt      2544
Gln Lys Ala Tyr Ala Pro Phe Leu Leu His Trp Ile Thr Arg Gly Val
        835                 840                 845

gtg ctg ctg ctg ttt ctc gcc ctg ttc gga gtg agc ctc tac tcc atg      2592
Val Leu Leu Leu Phe Leu Ala Leu Phe Gly Val Ser Leu Tyr Ser Met
    850                 855                 860

tgc cac atc agc gtg gga ctg gac cag gag ctg gcc ctg ccc aag gac      2640
Cys His Ile Ser Val Gly Leu Asp Gln Glu Leu Ala Leu Pro Lys Asp
865                 870                 875                 880

tcg tac ctg ctt gac tat ttc ctc ttt ctg aac cgc tac ttc gag gtg      2688
Ser Tyr Leu Leu Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Phe Glu Val
                885                 890                 895

ggg gcc ccg gtg tac ttt gtt acc acc ttg ggc tac aac ttc tcc agc      2736
Gly Ala Pro Val Tyr Phe Val Thr Thr Leu Gly Tyr Asn Phe Ser Ser
            900                 905                 910

gag gct ggg atg aat gcc atc tgc tcc agt gca ggc tgc aac aac ttc      2784
Glu Ala Gly Met Asn Ala Ile Cys Ser Ser Ala Gly Cys Asn Asn Phe
        915                 920                 925

tcc ttc acc cag aag atc cag tat gcc aca gag ttc cct gag cag tct      2832
Ser Phe Thr Gln Lys Ile Gln Tyr Ala Thr Glu Phe Pro Glu Gln Ser
    930                 935                 940

tac ctg gcc atc cct gcc tcc tcc tgg gtg gat gac ttc att gac tgg      2880
Tyr Leu Ala Ile Pro Ala Ser Ser Trp Val Asp Asp Phe Ile Asp Trp
945                 950                 955                 960

ctg acc ccg tcc tcc tgc tgc cgc ctt tat ata tct ggc ccc aat aag      2928
Leu Thr Pro Ser Ser Cys Cys Arg Leu Tyr Ile Ser Gly Pro Asn Lys
                965                 970                 975

gac aag ttc tgc ccc tcg acc gtc aac tct ctg aac tgc cta aag aac      2976
Asp Lys Phe Cys Pro Ser Thr Val Asn Ser Leu Asn Cys Leu Lys Asn
            980                 985                 990

tgc atg agc atc acg atg ggc tct  gtg agg ccc tcg gtg  gag cag ttc    3024
Cys Met Ser Ile Thr Met Gly Ser  Val Arg Pro Ser Val  Glu Gln Phe
        995                 1000                1005

cat aag  tat ctt ccc tgg ttc  ctg aac gac cgg ccc  aac atc aaa       3069
His Lys  Tyr Leu Pro Trp Phe  Leu Asn Asp Arg Pro  Asn Ile Lys
    1010                1015                1020
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tgt ccc  aaa ggc ggc ctg gca  gca tac agc acc tct  gtg aac ttg      3114
Cys Pro  Lys Gly Gly Leu Ala  Ala Tyr Ser Thr Ser  Val Asn Leu
    1025                 1030                 1035

act tca  gat ggc cag gtt tta  gcc tcc agg ttc atg  gcc tat cac      3159
Thr Ser  Asp Gly Gln Val Leu  Ala Ser Arg Phe Met  Ala Tyr His
    1040                 1045                 1050

aag ccc  ctg aaa aac tca cag  gat tac aca gaa gct  ctg cgg gca      3204
Lys Pro  Leu Lys Asn Ser Gln  Asp Tyr Thr Glu Ala  Leu Arg Ala
    1055                 1060                 1065

gct cga  gag ctg gca gcc aac  atc act gct gac ctg  cgg aaa gtg      3249
Ala Arg  Glu Leu Ala Ala Asn  Ile Thr Ala Asp Leu  Arg Lys Val
    1070                 1075                 1080

cct gga  aca gac ccg gct ttt  gag gtc ttc ccc tac  acg atc acc      3294
Pro Gly  Thr Asp Pro Ala Phe  Glu Val Phe Pro Tyr  Thr Ile Thr
    1085                 1090                 1095

aat gtg  ttt tat gag cag tac  ctg acc atc ctc cct  gag ggg ctc      3339
Asn Val  Phe Tyr Glu Gln Tyr  Leu Thr Ile Leu Pro  Glu Gly Leu
    1100                 1105                 1110

ttc atg  ctc agc ctc tgc ctt  gtg ccc acc ttc gct  gtc tcc tgc      3384
Phe Met  Leu Ser Leu Cys Leu  Val Pro Thr Phe Ala  Val Ser Cys
    1115                 1120                 1125

ctc ctg  ctg ggc ctg gac ctg  cgc tcc ggc ctc ctc  aac ctg ctc      3429
Leu Leu  Leu Gly Leu Asp Leu  Arg Ser Gly Leu Leu  Asn Leu Leu
    1130                 1135                 1140

tcc att  gtc atg atc ctc gtg  gac act gtc ggc ttc  atg gcc ctg      3474
Ser Ile  Val Met Ile Leu Val  Asp Thr Val Gly Phe  Met Ala Leu
    1145                 1150                 1155

tgg gac  atc agt tac aat gct  gtg tcc ctc atc aac  ctg gtc tcg      3519
Trp Asp  Ile Ser Tyr Asn Ala  Val Ser Leu Ile Asn  Leu Val Ser
    1160                 1165                 1170

gcg gtg  ggc atg tct gtg gag  ttt gtg tcc cac att  acc cgc tcc      3564
Ala Val  Gly Met Ser Val Glu  Phe Val Ser His Ile  Thr Arg Ser
    1175                 1180                 1185

ttt gcc  atc agc acc aag ccc  acc tgg ctg gag agg  gcc aaa gag      3609
Phe Ala  Ile Ser Thr Lys Pro  Thr Trp Leu Glu Arg  Ala Lys Glu
    1190                 1195                 1200

gcc acc  atc tct atg gga agt  gcg gtg ttt gca ggt  gtg gcc atg      3654
Ala Thr  Ile Ser Met Gly Ser  Ala Val Phe Ala Gly  Val Ala Met
    1205                 1210                 1215

acc aac  ctg cct ggc atc ctt  gtc ctg ggc ctc gcc  aag gcc cag      3699
Thr Asn  Leu Pro Gly Ile Leu  Val Leu Gly Leu Ala  Lys Ala Gln
    1220                 1225                 1230

ctc att  cag atc ttc ttc ttc  cgc ctc aac ctc ctg  atc act ctg      3744
Leu Ile  Gln Ile Phe Phe Phe  Arg Leu Asn Leu Leu  Ile Thr Leu
    1235                 1240                 1245
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ctg ggc  ctg ctg cat ggc ttg  gtc ttc ctg ccc gtc  atc ctc agc      3789
Leu Gly  Leu Leu His Gly Leu  Val Phe Leu Pro Val  Ile Leu Ser
    1250                 1255                 1260

tac gtg  ggg cct gac gtt aac  ccg gct ctg gca ctg  gag cag aag      3834
Tyr Val  Gly Pro Asp Val Asn  Pro Ala Leu Ala Leu  Glu Gln Lys
    1265                 1270                 1275

cgg gct  gag gag gcg gtg gca  gca gtc atg gtg gcc  tct tgc cca      3879
Arg Ala  Glu Glu Ala Val Ala  Ala Val Met Val Ala  Ser Cys Pro
    1280                 1285                 1290

aat cac  ccc tcc cga gtc tcc  aca gct gac aac atc  tat gtc aac      3924
Asn His  Pro Ser Arg Val Ser  Thr Ala Asp Asn Ile  Tyr Val Asn
    1295                 1300                 1305

cac agc  ttt gaa ggt tct atc  aaa ggt gct ggt gcc  atc agc aac      3969
His Ser  Phe Glu Gly Ser Ile  Lys Gly Ala Gly Ala  Ile Ser Asn
    1310                 1315                 1320

ttc ttg  ccc aac aat ggg cgg  cag ttc tga                         3999
Phe Leu  Pro Asn Asn Gly Arg  Gln Phe
    1325                 1330
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Met Ala Glu Ala Gly Leu Arg Gly Trp Leu Leu Trp Ala Leu Leu Leu
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Arg Leu Ala Gln Ser Glu Pro Tyr Thr Thr Ile His Gln Pro Gly Tyr
            20                  25                  30

Cys Ala Phe Tyr Asp Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Ser
        35                  40                  45

Leu Met Thr Leu Ser Asn Val Ser Cys Leu Ser Asn Thr Pro Ala Arg
    50                  55                  60

Lys Ile Thr Gly Asp His Leu Ile Leu Leu Gln Lys Ile Cys Pro Arg
65                  70                  75                  80

Leu Tyr Thr Gly Pro Asn Thr Gln Ala Cys Cys Ser Ala Lys Gln Leu
                85                  90                  95
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Val Ser Leu Glu Ala Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg
100 105 110

Cys Pro Ala Cys Ser Asp Asn Phe Val Asn Leu His Cys His Asn Thr
115 120 125

Cys Ser Pro Asn Gln Ser Leu Phe Ile Asn Val Thr Arg Val Ala Gln
130 135 140

Leu Gly Ala Gly Gln Leu Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr
145 150 155 160

Gln His Ser Phe Ala Glu Gln Ser Tyr Asp Ser Cys Ser Arg Val Arg
165 170 175

Val Pro Ala Ala Ala Thr Leu Ala Val Gly Thr Met Cys Gly Val Tyr
180 185 190

Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp
195 200 205

Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu
210 215 220

Pro Gly Gln Ala Val Gly Ser Gly Ile Gln Pro Leu Asn Glu Gly Val
225 230 235 240

Ala Arg Cys Asn Glu Ser Gln Gly Asp Asp Val Ala Thr Cys Ser Cys
245 250 255

Gln Asp Cys Ala Ala Ser Cys Pro Ala Ile Ala Arg Pro Gln Ala Leu
260 265 270

Asp Ser Thr Phe Tyr Leu Gly Gln Met Pro Gly Ser Leu Val Leu Ile
275 280 285

Ile Ile Leu Cys Ser Val Phe Ala Val Val Thr Ile Leu Leu Val Gly
290 295 300

Phe Arg Val Ala Pro Ala Arg Asp Lys Ser Lys Met Val Asp Pro Lys
305 310 315 320

Lys Gly Thr Ser Leu Ser Asp Lys Leu Ser Phe Ser Thr His Thr Leu
325 330 335

Leu Gly Gln Phe Phe Gln Gly Trp Gly Thr Trp Val Ala Ser Trp Pro

340 345 350

Leu Thr Ile Leu Val Leu Ser Val Ile Pro Val Val Ala Leu Ala Ala
355 360 365

Gly Leu Val Phe Thr Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser
370 375 380

Ala Pro Asn Ser Gln Ala Arg Ser Glu Lys Ala Phe His Asp Gln His
385 390 395 400

Phe Gly Pro Phe Phe Arg Thr Asn Gln Val Ile Leu Thr Ala Pro Asn
405 410 415

Arg Ser Ser Tyr Arg Tyr Asp Ser Leu Leu Leu Gly Pro Lys Asn Phe
420 425 430

Ser Gly Ile Leu Asp Leu Asp Leu Leu Leu Glu Leu Leu Glu Leu Gln
435 440 445

Glu Arg Leu Arg His Leu Gln Val Trp Ser Pro Glu Ala Gln Arg Asn
450 455 460

Ile Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro Asp Asn Thr
465 470 475 480

Ser Leu Tyr Asp Cys Cys Ile Asn Ser Leu Leu Gln Tyr Phe Gln Asn
485 490 495

Asn Arg Thr Leu Leu Leu Leu Thr Ala Asn Gln Thr Leu Met Gly Gln
500 505 510

Thr Ser Gln Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala
515 520 525

Pro Leu Thr Phe Lys Asp Gly Thr Ala Leu Ala Leu Ser Cys Met Ala
530 535 540

Asp Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Ile Gly Gly Tyr Lys
545 550 555 560

Gly Lys Asp Tyr Ser Glu Ala Glu Ala Leu Ile Met Thr Phe Ser Leu
565 570 575

Asn Asn Tyr Pro Ala Gly Asp Pro Arg Leu Ala Gln Ala Lys Leu Trp
580 585 590

Glu Glu Ala Phe Leu Glu Glu Met Arg Ala Phe Gln Arg Arg Met Ala
595 600 605

Gly Met Phe Gln Val Thr Phe Thr Ala Glu Arg Ser Leu Glu Asp Glu
610 615 620

Ile Asn Arg Thr Thr Ala Glu Asp Leu Pro Ile Phe Ala Thr Ser Tyr
625 630 635 640

Ile Val Ile Phe Leu Tyr Ile Ser Leu Ala Leu Gly Ser Tyr Ser Ser
645 650 655

Trp Ser Arg Val Met Val Asp Ser Lys Ala Thr Leu Gly Leu Gly Gly
660 665 670

Val Ala Val Val Leu Gly Ala Val Met Ala Ala Met Gly Phe Phe Ser
675 680 685

Tyr Leu Gly Ile Arg Ser Ser Leu Val Ile Leu Gln Val Val Pro Phe
690 695 700

Leu Val Leu Ser Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu
705 710 715 720

Tyr Gln Arg Leu Pro Arg Arg Pro Gly Glu Pro Arg Glu Val His Ile
725 730 735

Gly Arg Ala Leu Gly Arg Val Ala Pro Ser Met Leu Leu Cys Ser Leu
740 745 750

Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Pro Met Pro Ala
755 760 765

Val Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Val Ile Leu Asp Phe
770 775 780

Leu Leu Gln Met Ser Ala Phe Val Ala Leu Leu Ser Leu Asp Ser Lys
785 790 795 800

Arg Gln Glu Ala Ser Arg Leu Asp Val Cys Cys Cys Val Lys Pro Gln
805 810 815

Glu Leu Pro Pro Pro Gly Gln Gly Glu Gly Leu Leu Leu Gly Phe Phe
820 825 830

Gln Lys Ala Tyr Ala Pro Phe Leu Leu His Trp Ile Thr Arg Gly Val
835 840 845

Val Leu Leu Leu Phe Leu Ala Leu Phe Gly Val Ser Leu Tyr Ser Met
850 855 860

Cys His Ile Ser Val Gly Leu Asp Gln Glu Leu Ala Leu Pro Lys Asp
865 870 875 880

Ser Tyr Leu Leu Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Phe Glu Val
885 890 895

Gly Ala Pro Val Tyr Phe Val Thr Thr Leu Gly Tyr Asn Phe Ser Ser
900 905 910

Glu Ala Gly Met Asn Ala Ile Cys Ser Ser Ala Gly Cys Asn Asn Phe
915 920 925

Ser Phe Thr Gln Lys Ile Gln Tyr Ala Thr Glu Phe Pro Glu Gln Ser
930 935 940

Tyr Leu Ala Ile Pro Ala Ser Ser Trp Val Asp Asp Phe Ile Asp Trp
945 950 955 960

Leu Thr Pro Ser Ser Cys Cys Arg Leu Tyr Ile Ser Gly Pro Asn Lys
965 970 975

Asp Lys Phe Cys Pro Ser Thr Val Asn Ser Leu Asn Cys Leu Lys Asn
980 985 990

Cys Met Ser Ile Thr Met Gly Ser Val Arg Pro Ser Val Glu Gln Phe
995 1000 1005

His Lys Tyr Leu Pro Trp Phe Leu Asn Asp Arg Pro Asn Ile Lys
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Cys Pro Lys Gly Gly Leu Ala Ala Tyr Ser Thr Ser Val Asn Leu
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Thr Ser Asp Gly Gln Val Leu Ala Ser Arg Phe Met Ala Tyr His
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Lys Pro Leu Lys Asn Ser Gln Asp Tyr Thr Glu Ala Leu Arg Ala
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Ala Arg Glu Leu Ala Ala Asn Ile Thr Ala Asp Leu Arg Lys Val
1070 1075 1080

Pro Gly Thr Asp Pro Ala Phe Glu Val Phe Pro Tyr Thr Ile Thr
1085 1090 1095

Asn Val Phe Tyr Glu Gln Tyr Leu Thr Ile Leu Pro Glu Gly Leu
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Phe Met Leu Ser Leu Cys Leu Val Pro Thr Phe Ala Val Ser Cys
1115 1120 1125

Leu Leu Leu Gly Leu Asp Leu Arg Ser Gly Leu Leu Asn Leu Leu
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Ser Ile Val Met Ile Leu Val Asp Thr Val Gly Phe Met Ala Leu
1145 1150 1155

Trp Asp Ile Ser Tyr Asn Ala Val Ser Leu Ile Asn Leu Val Ser
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Ala Val Gly Met Ser Val Glu Phe Val Ser His Ile Thr Arg Ser
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Ala Thr Ile Ser Met Gly Ser Ala Val Phe Ala Gly Val Ala Met
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Thr Asn Leu Pro Gly Ile Leu Val Leu Gly Leu Ala Lys Ala Gln
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Leu Ile Gln Ile Phe Phe Phe Arg Leu Asn Leu Leu Ile Thr Leu
1235 1240 1245

Leu Gly Leu Leu His Gly Leu Val Phe Leu Pro Val Ile Leu Ser
1250 1255 1260

Tyr Val Gly Pro Asp Val Asn Pro Ala Leu Ala Leu Glu Gln Lys
1265 1270 1275

Arg Ala Glu Glu Ala Val Ala Ala Val Met Val Ala Ser Cys Pro
1280 1285 1290

Asn His Pro Ser Arg Val Ser Thr Ala Asp Asn Ile Tyr Val Asn

1295 1300 1305

His Ser Phe Glu Gly Ser Ile Lys Gly Ala Gly Ala Ile Ser Asn
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<211> 885

<212> DNA

<213> Rattus sp.

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<211> 458

<212> DNA

<213> Rattus sp.

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<210> 7

<211> 896

<212> DNA

<213> Rattus sp.

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<211> 3124

<212> DNA

<213> Rattus sp.

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<211> 4484

<212> DNA

<213> Rattus sp.

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<211> 3993
<212> DNA

<213> Rattus sp.

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wsntayytna thgaytaytt yytnttyytn aaymgntayy tngargtngg nccnccngtn 2700

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Met Ala Ala Ala Trp Gln Gly Trp Leu Leu Trp Ala Leu Leu Leu Asn
1               5                   10                  15

tcg gcc cag ggt gag ctc tac aca ccc act cac aaa gct ggc ttc tgc       96
Ser Ala Gln Gly Glu Leu Tyr Thr Pro Thr His Lys Ala Gly Phe Cys
            20                  25                  30

acc ttt tat gaa gag tgt ggg aag aac cca gag ctt tct gga ggc ctc      144
Thr Phe Tyr Glu Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Gly Leu
        35                  40                  45

aca tca cta tcc aat atc tcc tgc ttg tct aat acc cca gcc cgc cat      192
Thr Ser Leu Ser Asn Ile Ser Cys Leu Ser Asn Thr Pro Ala Arg His
    50                  55                  60

gtc aca ggt gac cac ctg gct ctt ctc cag cgc gtc tgt ccc cgc cta      240
Val Thr Gly Asp His Leu Ala Leu Leu Gln Arg Val Cys Pro Arg Leu
65                  70                  75                  80

tac aat ggc ccc aat gac acc tat gcc tgt tgc tct acc aag cag ctg      288
Tyr Asn Gly Pro Asn Asp Thr Tyr Ala Cys Cys Ser Thr Lys Gln Leu
                85                  90                  95

gtg tca tta gac agt agc ctg tct atc acc aag gcc ctc ctt aca cgc      336
Val Ser Leu Asp Ser Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg
            100                 105                 110

tgc ccg gca tgc tct gaa aat ttt gtg agc ata cac tgt cat aat acc      384
Cys Pro Ala Cys Ser Glu Asn Phe Val Ser Ile His Cys His Asn Thr
        115                 120                 125

tgc agc cct gac cag agc ctc ttc atc aat gtt act cgc gtg gtt cag      432
Cys Ser Pro Asp Gln Ser Leu Phe Ile Asn Val Thr Arg Val Val Gln
    130                 135                 140

cgg gac cct gga cag ctt cct gct gtg gtg gcc tat gag gcc ttt tat      480
Arg Asp Pro Gly Gln Leu Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr
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145                 150                 155                 160

caa cgc agt ttt gca gag aag gcc tat gag tcc tgt agc cgg gtg cgc      528
Gln Arg Ser Phe Ala Glu Lys Ala Tyr Glu Ser Cys Ser Arg Val Arg
                165                 170                 175

atc cct gca gct gcc tcg ctg gct gtg ggc agc atg tgt gga gtg tat      576
Ile Pro Ala Ala Ala Ser Leu Ala Val Gly Ser Met Cys Gly Val Tyr
            180                 185                 190

ggc tct gcc ctc tgc aat gct cag cgc tgg ctc aac ttc caa gga gac      624
Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp
        195                 200                 205

aca ggg aat ggc ctg gct ccg ctg gac atc acc ttc cac ctc ttg gag      672
Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu
    210                 215                 220

cct ggc cag gcc ctg gca gat ggg atg aag cca ctg gat ggg aag atc      720
Pro Gly Gln Ala Leu Ala Asp Gly Met Lys Pro Leu Asp Gly Lys Ile
225                 230                 235                 240

aca ccc tgc aat gag tcc cag ggt gaa gac tcg gca gcc tgt tcc tgc      768
Thr Pro Cys Asn Glu Ser Gln Gly Glu Asp Ser Ala Ala Cys Ser Cys
                245                 250                 255

cag gac tgt gca gca tcc tgc cct gtc atc cct ccg ccc ccg gcc ctg      816
Gln Asp Cys Ala Ala Ser Cys Pro Val Ile Pro Pro Pro Pro Ala Leu
            260                 265                 270

cgc cct tct ttc tac atg ggt cga atg cca ggc tgg ctg gct ctc atc      864
Arg Pro Ser Phe Tyr Met Gly Arg Met Pro Gly Trp Leu Ala Leu Ile
        275                 280                 285

atc atc ttc act gct gtc ttt gta ttg ctc tct gtt gtc ctt gtg tat      912
Ile Ile Phe Thr Ala Val Phe Val Leu Leu Ser Val Val Leu Val Tyr
    290                 295                 300

ctc cga gtg gct tcc aac agg aac aag aac aag aca gca ggc tcc cag      960
Leu Arg Val Ala Ser Asn Arg Asn Lys Asn Lys Thr Ala Gly Ser Gln
305                 310                 315                 320

gaa gcc ccc aac ctc cct cgt aag cgc aga ttc tca cct cac act gtc     1008
Glu Ala Pro Asn Leu Pro Arg Lys Arg Arg Phe Ser Pro His Thr Val
                325                 330                 335

ctt ggc cgg ttc ttc gag agc tgg gga aca agg gtg gcc tca tgg cca     1056
Leu Gly Arg Phe Phe Glu Ser Trp Gly Thr Arg Val Ala Ser Trp Pro
            340                 345                 350

ctc act gtc ttg gca ctg tcc ttc ata gtt gtg ata gcc ttg tca gta     1104
Leu Thr Val Leu Ala Leu Ser Phe Ile Val Val Ile Ala Leu Ser Val
        355                 360                 365

ggc ctg acc ttt ata gaa ctc acc aca gac cct gtg gaa ctg tgg tcg     1152
Gly Leu Thr Phe Ile Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser
    370                 375                 380

gcc cct aaa agc caa gcc cgg aaa gaa aag gct ttc cat gac gag cat     1200
Ala Pro Lys Ser Gln Ala Arg Lys Glu Lys Ala Phe His Asp Glu His
385                 390                 395                 400
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ttt ggc ccc ttc ttc cga acc aac cag att ttt gtg aca gct aag aac      1248
Phe Gly Pro Phe Phe Arg Thr Asn Gln Ile Phe Val Thr Ala Lys Asn
                405                 410                 415

agg tcc agc tac aag tac gac tcc ctg ctg cta ggg ccc aag aac ttc      1296
Arg Ser Ser Tyr Lys Tyr Asp Ser Leu Leu Leu Gly Pro Lys Asn Phe
            420                 425                 430

agt ggg atc cta tcc ctg gac ttg ctg cag gag ctg ttg gag cta cag      1344
Ser Gly Ile Leu Ser Leu Asp Leu Leu Gln Glu Leu Leu Glu Leu Gln
        435                 440                 445

gag aga ctt cga cac ctg caa gtg tgg tcc cat gag gca cag cgc aac      1392
Glu Arg Leu Arg His Leu Gln Val Trp Ser His Glu Ala Gln Arg Asn
    450                 455                 460

atc tcc ctc cag gac atc tgc tat gct ccc ctc aac ccg cat aac acc      1440
Ile Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro His Asn Thr
465                 470                 475                 480

agc ctc act gac tgc tgt gtc aac agc ctc ctt caa tac ttc cag aac      1488
Ser Leu Thr Asp Cys Cys Val Asn Ser Leu Leu Gln Tyr Phe Gln Asn
                485                 490                 495

aac cac aca ctc ctg ctg ctc aca gcc aat cag act ctg aat ggc cag      1536
Asn His Thr Leu Leu Leu Leu Thr Ala Asn Gln Thr Leu Asn Gly Gln
            500                 505                 510

acc tcc ctg gtg gac tgg aag gac cat ttc ctc tac tgt gcc aat gcc      1584
Thr Ser Leu Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala
        515                 520                 525

cct ctc acg tac aaa gat ggc aca gcc ctg gcc ctg agc tgc ata gct      1632
Pro Leu Thr Tyr Lys Asp Gly Thr Ala Leu Ala Leu Ser Cys Ile Ala
    530                 535                 540

gac tac ggg gca cct gtc ttc ccc ttc ctt gct gtt ggg ggc tac caa      1680
Asp Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Val Gly Gly Tyr Gln
545                 550                 555                 560

ggg acg gac tac tcg gag gca gaa gcc ctg atc ata acc ttc tct atc      1728
Gly Thr Asp Tyr Ser Glu Ala Glu Ala Leu Ile Ile Thr Phe Ser Ile
                565                 570                 575

aat aac tac ccc gct gat gat ccc cgc atg gcc cac gcc aag ctc tgg      1776
Asn Asn Tyr Pro Ala Asp Asp Pro Arg Met Ala His Ala Lys Leu Trp
            580                 585                 590

gag gag gct ttc ttg aag gaa atg caa tcc ttc cag aga agc aca gct      1824
Glu Glu Ala Phe Leu Lys Glu Met Gln Ser Phe Gln Arg Ser Thr Ala
        595                 600                 605

gac aag ttc cag att gcg ttc tca gct gag cgt tct ctg gag gac gag      1872
Asp Lys Phe Gln Ile Ala Phe Ser Ala Glu Arg Ser Leu Glu Asp Glu
    610                 615                 620

atc aat cgc act acc atc cag gac ctg cct gtc ttt gcc atc agc tac      1920
Ile Asn Arg Thr Thr Ile Gln Asp Leu Pro Val Phe Ala Ile Ser Tyr
625                 630                 635                 640
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ctt atc gtc ttc ctg tac atc tcc ctg gcc ctg ggc agc tac tcc aga      1968
Leu Ile Val Phe Leu Tyr Ile Ser Leu Ala Leu Gly Ser Tyr Ser Arg
                645                 650                 655

tgg agc cga gtt gcg gtg gat tcc aag gct act ctg ggc cta ggt ggg      2016
Trp Ser Arg Val Ala Val Asp Ser Lys Ala Thr Leu Gly Leu Gly Gly
            660                 665                 670

gtg gct gtt gtg ctg gga gca gtc gtc gct gcc atg ggc ttc tac tcc      2064
Val Ala Val Val Leu Gly Ala Val Val Ala Ala Met Gly Phe Tyr Ser
        675                 680                 685

tac ctg ggt gtc ccc tcc tct ctg gtc atc att caa gtg gta cct ttc      2112
Tyr Leu Gly Val Pro Ser Ser Leu Val Ile Ile Gln Val Val Pro Phe
    690                 695                 700

ctg gtg ctg gct gtg gga gct gac aac atc ttc atc ttt gtt ctt gag      2160
Leu Val Leu Ala Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu
705                 710                 715                 720

tac cag agg ctg cct agg atg ccc ggg gag cag cga gag gct cac att      2208
Tyr Gln Arg Leu Pro Arg Met Pro Gly Glu Gln Arg Glu Ala His Ile
                725                 730                 735

ggc cgc acc ctg ggt agt gtg gcc ccc agc atg ctg ctg tgc agc ctc      2256
Gly Arg Thr Leu Gly Ser Val Ala Pro Ser Met Leu Leu Cys Ser Leu
            740                 745                 750

tct gag gcc atc tgc ttc ttt cta ggg gcc ctg acc tcc atg cca gct      2304
Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Ser Met Pro Ala
        755                 760                 765

gtg agg acc ttt gcc ttg acc tct ggc tta gca atc atc ttt gac ttc      2352
Val Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Ile Ile Phe Asp Phe
    770                 775                 780

ctg ctc cag atg aca gcc ttt gtg gcc ctg ctc tcc ctg gat agc aag      2400
Leu Leu Gln Met Thr Ala Phe Val Ala Leu Leu Ser Leu Asp Ser Lys
785                 790                 795                 800

agg cag gag gcc tct cgc ccc gac gtc gtg tgc tgc ttt tca agc cga      2448
Arg Gln Glu Ala Ser Arg Pro Asp Val Val Cys Cys Phe Ser Ser Arg
                805                 810                 815

aat ctg ccc cca ccg aaa caa aaa gaa ggc ctc tta ctt tgc ttc ttc      2496
Asn Leu Pro Pro Pro Lys Gln Lys Glu Gly Leu Leu Leu Cys Phe Phe
            820                 825                 830

cgc aag ata tac act ccc ttc ctg ctg cac aga ttc atc cgc cct gtt      2544
Arg Lys Ile Tyr Thr Pro Phe Leu Leu His Arg Phe Ile Arg Pro Val
        835                 840                 845

gtg ctg ctg ctc ttt ctg gtc ctg ttt gga gca aac ctc tac tta atg      2592
Val Leu Leu Leu Phe Leu Val Leu Phe Gly Ala Asn Leu Tyr Leu Met
    850                 855                 860

tgc aac atc agc gtg ggg ctg gac cag gat ctg gct ctg ccc aag gat      2640
Cys Asn Ile Ser Val Gly Leu Asp Gln Asp Leu Ala Leu Pro Lys Asp
865                 870                 875                 880

tcc tac ctg ata gac tac ttc ctc ttt ctg aac cgg tac ttg gaa gtg      2688
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Ser Tyr Leu Ile Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Leu Glu Val
                885                 890                 895

ggg cct cca gtg tac ttt gac acc acc tca ggc tac aac ttt tcc acc     2736
Gly Pro Pro Val Tyr Phe Asp Thr Thr Ser Gly Tyr Asn Phe Ser Thr
            900                 905                 910

gag gca ggc atg aac gcc att tgc tct agt gca ggc tgt gag agc ttc     2784
Glu Ala Gly Met Asn Ala Ile Cys Ser Ser Ala Gly Cys Glu Ser Phe
        915                 920                 925

tcc cta acc cag aaa atc cag tat gcc agt gaa ttc cct aat cag tct     2832
Ser Leu Thr Gln Lys Ile Gln Tyr Ala Ser Glu Phe Pro Asn Gln Ser
    930                 935                 940

tat gtg gct att gct gca tcc tcc tgg gta gat gac ttc atc gac tgg     2880
Tyr Val Ala Ile Ala Ala Ser Ser Trp Val Asp Asp Phe Ile Asp Trp
945                 950                 955                 960

ctg acc cca tcc tcc tcc tgc tgc cgc att tat acc cgt ggc ccc cat     2928
Leu Thr Pro Ser Ser Ser Cys Cys Arg Ile Tyr Thr Arg Gly Pro His
                965                 970                 975

aaa gat gag ttc tgt ccc tca acg gat act tcc ttc aac tgt ctc aaa     2976
Lys Asp Glu Phe Cys Pro Ser Thr Asp Thr Ser Phe Asn Cys Leu Lys
            980                 985                 990

aac tgc atg aac cgc act ctg ggt  ccc gtg aga ccc aca  aca gaa cag   3024
Asn Cys Met Asn Arg Thr Leu Gly  Pro Val Arg Pro Thr  Thr Glu Gln
        995                 1000                1005

ttt cat  aag tac ctg ccc tgg  ttc ctg aat gat acg  ccc aac atc      3069
Phe His  Lys Tyr Leu Pro Trp  Phe Leu Asn Asp Thr  Pro Asn Ile
    1010                1015                1020

aga tgt  cct aaa ggg ggc cta  gca gcg tat aga acc  tct gtg aat      3114
Arg Cys  Pro Lys Gly Gly Leu  Ala Ala Tyr Arg Thr  Ser Val Asn
    1025                1030                1035

ttg agc  tca gat ggc cag att  ata gcc tcc cag ttc  atg gcc tac      3159
Leu Ser  Ser Asp Gly Gln Ile  Ile Ala Ser Gln Phe  Met Ala Tyr
    1040                1045                1050

cac aag  ccc tta cgg aac tca  cag gac ttt aca gaa  gct ctc cgg      3204
His Lys  Pro Leu Arg Asn Ser  Gln Asp Phe Thr Glu  Ala Leu Arg
    1055                1060                1065

gca tcc  cgg ttg cta gca gcc  aac atc aca gct gaa  cta cgg aag      3249
Ala Ser  Arg Leu Leu Ala Ala  Asn Ile Thr Ala Glu  Leu Arg Lys
    1070                1075                1080

gtg cct  ggg aca gat ccc aac  ttt gag gtc ttc cct  tac acg atc      3294
Val Pro  Gly Thr Asp Pro Asn  Phe Glu Val Phe Pro  Tyr Thr Ile
    1085                1090                1095

tcc aat  gtg ttc tac cag caa  tac ctg acg gtt ctc  cct gag gga      3339
Ser Asn  Val Phe Tyr Gln Gln  Tyr Leu Thr Val Leu  Pro Glu Gly
    1100                1105                1110

atc ttc  act ctt gct ctc tgc  ttc gtg ccc acc ttt  gtg gtc tgc      3384
Ile Phe  Thr Leu Ala Leu Cys  Phe Val Pro Thr Phe  Val Val Cys
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    1115                1120                1125

tac ctc  cta ctg ggc ctg gac  ata cgc tca ggc atc  ctc aac ctg      3429
Tyr Leu  Leu Leu Gly Leu Asp  Ile Arg Ser Gly Ile  Leu Asn Leu
    1130                1135                1140

ctc tcc  atc att atg atc ctc  gtg gac acc atc ggc  ctc atg gct      3474
Leu Ser  Ile Ile Met Ile Leu  Val Asp Thr Ile Gly  Leu Met Ala
    1145                1150                1155

gtg tgg  ggt atc agc tac aat  gct gtg tcc ctc atc  aac ctt gtc      3519
Val Trp  Gly Ile Ser Tyr Asn  Ala Val Ser Leu Ile  Asn Leu Val
    1160                1165                1170

acg gca  gtg ggc atg tct gtg  gag ttc gtg tcc cac  att acc cgg      3564
Thr Ala  Val Gly Met Ser Val  Glu Phe Val Ser His  Ile Thr Arg
    1175                1180                1185

tcc ttt  gct gta agc acc aag  cct acc cgg ctg gag  aga gcc aaa      3609
Ser Phe  Ala Val Ser Thr Lys  Pro Thr Arg Leu Glu  Arg Ala Lys
    1190                1195                1200

gat gct  act atc ttc atg ggc  agt gcg gtg ttt gct  gga gtg gcc      3654
Asp Ala  Thr Ile Phe Met Gly  Ser Ala Val Phe Ala  Gly Val Ala
    1205                1210                1215

atg acc  aac ttc ccg ggc atc  ctc atc ctg ggc ttt  gct cag gcc      3699
Met Thr  Asn Phe Pro Gly Ile  Leu Ile Leu Gly Phe  Ala Gln Ala
    1220                1225                1230

cag ctt  atc cag att ttc ttc  ttc cgc ctc aac ctc  ctg atc acc      3744
Gln Leu  Ile Gln Ile Phe Phe  Phe Arg Leu Asn Leu  Leu Ile Thr
    1235                1240                1245

ttg ctg  ggt ctg cta cac ggc  ctg gtc ttc ctg ccc  gtt gtc ctc      3789
Leu Leu  Gly Leu Leu His Gly  Leu Val Phe Leu Pro  Val Val Leu
    1250                1255                1260

agc tat  ctg ggg cca gat gtt  aac caa gct ctg gta  ctg gag gag      3834
Ser Tyr  Leu Gly Pro Asp Val  Asn Gln Ala Leu Val  Leu Glu Glu
    1265                1270                1275

aaa cta  gcc act gag gca gcc  atg gtc tca gag cct  tct tgc cca      3879
Lys Leu  Ala Thr Glu Ala Ala  Met Val Ser Glu Pro  Ser Cys Pro
    1280                1285                1290

cag tac  ccc ttc ccg gct gat  gca aac acc agt gac  tat gtt aac      3924
Gln Tyr  Pro Phe Pro Ala Asp  Ala Asn Thr Ser Asp  Tyr Val Asn
    1295                1300                1305

tac ggc  ttt aat cca gaa ttt  atc cct gaa att aat  gct gct agc      3969
Tyr Gly  Phe Asn Pro Glu Phe  Ile Pro Glu Ile Asn  Ala Ala Ser
    1310                1315                1320

agc tct  ctg ccc aaa agt gac  caa aag ttc taa                      4002
Ser Ser  Leu Pro Lys Ser Asp  Gln Lys Phe
    1325                1330
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Met Ala Ala Ala Trp Gln Gly Trp Leu Leu Trp Ala Leu Leu Leu Asn
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Ser Ala Gln Gly Glu Leu Tyr Thr Pro Thr His Lys Ala Gly Phe Cys
            20                  25                  30

Thr Phe Tyr Glu Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Gly Leu
        35                  40                  45

Thr Ser Leu Ser Asn Ile Ser Cys Leu Ser Asn Thr Pro Ala Arg His
    50                  55                  60

Val Thr Gly Asp His Leu Ala Leu Leu Gln Arg Val Cys Pro Arg Leu
65                  70                  75                  80

Tyr Asn Gly Pro Asn Asp Thr Tyr Ala Cys Cys Ser Thr Lys Gln Leu
                85                  90                  95

Val Ser Leu Asp Ser Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg
            100                 105                 110

Cys Pro Ala Cys Ser Glu Asn Phe Val Ser Ile His Cys His Asn Thr
        115                 120                 125

Cys Ser Pro Asp Gln Ser Leu Phe Ile Asn Val Thr Arg Val Val Gln
    130                 135                 140

Arg Asp Pro Gly Gln Leu Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr
145                 150                 155                 160

Gln Arg Ser Phe Ala Glu Lys Ala Tyr Glu Ser Cys Ser Arg Val Arg
                165                 170                 175

Ile Pro Ala Ala Ala Ser Leu Ala Val Gly Ser Met Cys Gly Val Tyr
            180                 185                 190

Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp
        195                 200                 205
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Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu
    210                 215                 220

Pro Gly Gln Ala Leu Ala Asp Gly Met Lys Pro Leu Asp Gly Lys Ile
225                 230                 235                 240

Thr Pro Cys Asn Glu Ser Gln Gly Glu Asp Ser Ala Ala Cys Ser Cys
                245                 250                 255

Gln Asp Cys Ala Ala Ser Cys Pro Val Ile Pro Pro Pro Pro Ala Leu
            260                 265                 270

Arg Pro Ser Phe Tyr Met Gly Arg Met Pro Gly Trp Leu Ala Leu Ile
        275                 280                 285

Ile Ile Phe Thr Ala Val Phe Val Leu Leu Ser Val Val Leu Val Tyr
    290                 295                 300

Leu Arg Val Ala Ser Asn Arg Asn Lys Asn Lys Thr Ala Gly Ser Gln
305                 310                 315                 320

Glu Ala Pro Asn Leu Pro Arg Lys Arg Arg Phe Ser Pro His Thr Val
                325                 330                 335

Leu Gly Arg Phe Phe Glu Ser Trp Gly Thr Arg Val Ala Ser Trp Pro
            340                 345                 350

Leu Thr Val Leu Ala Leu Ser Phe Ile Val Val Ile Ala Leu Ser Val
        355                 360                 365

Gly Leu Thr Phe Ile Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser
    370                 375                 380

Ala Pro Lys Ser Gln Ala Arg Lys Glu Lys Ala Phe His Asp Glu His
385                 390                 395                 400

Phe Gly Pro Phe Phe Arg Thr Asn Gln Ile Phe Val Thr Ala Lys Asn
                405                 410                 415

Arg Ser Ser Tyr Lys Tyr Asp Ser Leu Leu Leu Gly Pro Lys Asn Phe
            420                 425                 430

Ser Gly Ile Leu Ser Leu Asp Leu Leu Gln Glu Leu Leu Glu Leu Gln
        435                 440                 445
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Glu Arg Leu Arg His Leu Gln Val Trp Ser His Glu Ala Gln Arg Asn
450 455 460

Ile Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro His Asn Thr
465 470 475 480

Ser Leu Thr Asp Cys Cys Val Asn Ser Leu Leu Gln Tyr Phe Gln Asn
485 490 495

Asn His Thr Leu Leu Leu Leu Thr Ala Asn Gln Thr Leu Asn Gly Gln
500 505 510

Thr Ser Leu Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala
515 520 525

Pro Leu Thr Tyr Lys Asp Gly Thr Ala Leu Ala Leu Ser Cys Ile Ala
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610 615 620

Ile Asn Arg Thr Thr Ile Gln Asp Leu Pro Val Phe Ala Ile Ser Tyr
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Leu Ile Val Phe Leu Tyr Ile Ser Leu Ala Leu Gly Ser Tyr Ser Arg
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Trp Ser Arg Val Ala Val Asp Ser Lys Ala Thr Leu Gly Leu Gly Gly
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Val Ala Val Val Leu Gly Ala Val Val Ala Ala Met Gly Phe Tyr Ser
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Tyr Leu Gly Val Pro Ser Ser Leu Val Ile Ile Gln Val Val Pro Phe

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Tyr Gln Arg Leu Pro Arg Met Pro Gly Glu Gln Arg Glu Ala His Ile
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Gly Arg Thr Leu Gly Ser Val Ala Pro Ser Met Leu Leu Cys Ser Leu
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Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Ser Met Pro Ala
755 760 765

Val Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Ile Ile Phe Asp Phe
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785 790 795 800

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805 810 815

Asn Leu Pro Pro Pro Lys Gln Lys Glu Gly Leu Leu Leu Cys Phe Phe
820 825 830

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835 840 845

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850 855 860

Cys Asn Ile Ser Val Gly Leu Asp Gln Asp Leu Ala Leu Pro Lys Asp
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Ser Tyr Leu Ile Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Leu Glu Val
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Gly Pro Pro Val Tyr Phe Asp Thr Thr Ser Gly Tyr Asn Phe Ser Thr
900 905 910

Glu Ala Gly Met Asn Ala Ile Cys Ser Ser Ala Gly Cys Glu Ser Phe
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Ser Leu Thr Gln Lys Ile Gln Tyr Ala Ser Glu Phe Pro Asn Gln Ser
930 935 940

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Phe His  Lys Tyr Leu Pro Trp  Phe Leu Asn Asp Thr  Pro Asn Ile
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Arg Cys  Pro Lys Gly Gly Leu  Ala Ala Tyr Arg Thr  Ser Val Asn
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Leu Ser  Ser Asp Gly Gln Ile  Ile Ala Ser Gln Phe  Met Ala Tyr
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His Lys  Pro Leu Arg Asn Ser  Gln Asp Phe Thr Glu  Ala Leu Arg
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Ser Asn  Val Phe Tyr Gln Gln  Tyr Leu Thr Val Leu  Pro Glu Gly
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Tyr Leu  Leu Leu Gly Leu Asp  Ile Arg Ser Gly Ile  Leu Asn Leu
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Val Trp  Gly Ile Ser Tyr Asn  Ala Val Ser Leu Ile  Asn Leu Val
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Met Thr Asn Phe Pro Gly Ile Leu Ile Leu Gly Phe Ala Gln Ala
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Gln Leu Ile Gln Ile Phe Phe Phe Arg Leu Asn Leu Leu Ile Thr
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Leu Leu Gly Leu Leu His Gly Leu Val Phe Leu Pro Val Val Leu
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Ser Tyr Leu Gly Pro Asp Val Asn Gln Ala Leu Val Leu Glu Glu
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Lys Leu Ala Thr Glu Ala Ala Met Val Ser Glu Pro Ser Cys Pro
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Gln Tyr Pro Phe Pro Ala Asp Ala Asn Thr Ser Asp Tyr Val Asn
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aayccngary tnwsnggngg nytnacnwsn ytnwsnaaya thwsntgyyt nwsnaayacn 180

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Ala Glu Ala Gly Leu Arg Gly Trp Leu Leu Trp Ala Leu Leu Leu Arg
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ttg gcc cag agt gag cct tac aca acc atc cac cag cct ggc tac tgc      155
Leu Ala Gln Ser Glu Pro Tyr Thr Thr Ile His Gln Pro Gly Tyr Cys
        20                  25                  30

gcc ttc tat gac gaa tgt ggg aag aac cca gag ctg tct gga agc ctc      203
Ala Phe Tyr Asp Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Ser Leu
    35                  40                  45

atg aca ctc tcc aac gtg tcc tgc ctg tcc aac acg ccg gcc cgc aag      251
Met Thr Leu Ser Asn Val Ser Cys Leu Ser Asn Thr Pro Ala Arg Lys
50                  55                  60                  65

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Ile Thr Gly Asp His Leu Ile Leu Leu Gln Lys Ile Cys Pro Arg Leu
                70                  75                  80

tac acc ggc ccc aac acc caa gcc tgc tgc tcc gcc aag cag ctg gta      347
Tyr Thr Gly Pro Asn Thr Gln Ala Cys Cys Ser Ala Lys Gln Leu Val
            85                  90                  95

tca ctg gaa gcg agt ctg tcg atc acc aag gcc ctc ctc acc cgc tgc      395
Ser Leu Glu Ala Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg Cys
        100                 105                 110

cca gcc tgc tct gac aat ttt gtg aac ctg cac tgc cac aac acg tgc      443
Pro Ala Cys Ser Asp Asn Phe Val Asn Leu His Cys His Asn Thr Cys
    115                 120                 125
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ggg gct gga caa ctc cca gct gtg gtg gcc tat gag gcc ttc tac cag      539
Gly Ala Gly Gln Leu Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr Gln
                150                 155                 160

cat agc ttt gcc gag cag agc tat gac tcc tgc agc cgt gtg cgc gtc      587
His Ser Phe Ala Glu Gln Ser Tyr Asp Ser Cys Ser Arg Val Arg Val
            165                 170                 175

cct gca gct gcc acg ctg gct gtg ggc acc atg tgt ggc gtg tat ggc      635
Pro Ala Ala Ala Thr Leu Ala Val Gly Thr Met Cys Gly Val Tyr Gly
        180                 185                 190

tct gcc ctt tgc aat gcc cag cgc tgg ctc aac ttc cag gga gac aca      683
Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp Thr
    195                 200                 205

ggc aat ggt ctg gcc cca ctg gac atc acc ttc cac ctc ttg gag cct      731
Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu Pro
210                 215                 220                 225

ggc cag gcc gtg ggg agt ggg att cag cct ctg aat gag ggg gtt gca      779
Gly Gln Ala Val Gly Ser Gly Ile Gln Pro Leu Asn Glu Gly Val Ala
                230                 235                 240

cgt tgc aat gag tcc caa ggt gac gac gtg gcg acc tgc tcc tgc caa      827
Arg Cys Asn Glu Ser Gln Gly Asp Asp Val Ala Thr Cys Ser Cys Gln
            245                 250                 255

gac tgt gct gca tcc tgt cct gcc ata gcc cgc ccc cag gcc ctc gac      875
Asp Cys Ala Ala Ser Cys Pro Ala Ile Ala Arg Pro Gln Ala Leu Asp
        260                 265                 270

tcc acc ttc tac ctg ggc cag atg ccg ggc agt ctg gtc ctc atc atc      923
Ser Thr Phe Tyr Leu Gly Gln Met Pro Gly Ser Leu Val Leu Ile Ile
    275                 280                 285

atc ctc tgc tct gtc ttc gct gtg gtc acc atc ctg ctt gtg gga ttc      971
Ile Leu Cys Ser Val Phe Ala Val Val Thr Ile Leu Leu Val Gly Phe
290                 295                 300                 305

cgt gtg gcc ccc gcc agg gac aaa agc aag atg gtg gac ccc aag aag     1019
Arg Val Ala Pro Ala Arg Asp Lys Ser Lys Met Val Asp Pro Lys Lys
                310                 315                 320

ggc acc agc ctc tct gac aag ctc agc ttc tcc acc cac acc ctc ctt     1067
Gly Thr Ser Leu Ser Asp Lys Leu Ser Phe Ser Thr His Thr Leu Leu
            325                 330                 335

ggc cag ttc ttc cag ggc tgg ggc acg tgg gtg gct tcg tgg cct ctg     1115
Gly Gln Phe Phe Gln Gly Trp Gly Thr Trp Val Ala Ser Trp Pro Leu
        340                 345                 350

acc atc ttg gtg cta tct gtc atc ccg gtg gtg gcc ttg gca gcg ggc     1163
Thr Ile Leu Val Leu Ser Val Ile Pro Val Val Ala Leu Ala Ala Gly
    355                 360                 365
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ctg gtc ttt aca gaa ctc act acg gac ccc gtg gag ctg tgg tcg gcc     1211
Leu Val Phe Thr Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser Ala
370                 375                 380                 385

ccc aac agc caa gcc cgg agt gag aaa gct ttc cat gac cag cat ttc     1259
Pro Asn Ser Gln Ala Arg Ser Glu Lys Ala Phe His Asp Gln His Phe
                390                 395                 400

ggc ccc ttc ttc cga acc aac cag gtg atc ctg acg gct cct aac cgg     1307
Gly Pro Phe Phe Arg Thr Asn Gln Val Ile Leu Thr Ala Pro Asn Arg
            405                 410                 415

tcc agc tac agg tat gac tct ctg ctg ctg ggg ccc aag aac ttc agc     1355
Ser Ser Tyr Arg Tyr Asp Ser Leu Leu Leu Gly Pro Lys Asn Phe Ser
        420                 425                 430

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Gly Ile Leu Asp Leu Asp Leu Leu Leu Glu Leu Leu Glu Leu Gln Glu
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agg ctg cgg cac ctc cag gta tgg tcg ccc gaa gca cag cgc aac atc     1451
Arg Leu Arg His Leu Gln Val Trp Ser Pro Glu Ala Gln Arg Asn Ile
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tcc ctg cag gac atc tgc tac gcc ccc ctc aat ccg gac aat acc agt     1499
Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro Asp Asn Thr Ser
                470                 475                 480

ctc tac gac tgc tgc atc aac agc ctc ctg cag tat ttc cag aac aac     1547
Leu Tyr Asp Cys Cys Ile Asn Ser Leu Leu Gln Tyr Phe Gln Asn Asn
            485                 490                 495

cgc acg ctc ctg ctg ctc aca gcc aac cag aca ctg atg ggg cag acc     1595
Arg Thr Leu Leu Leu Leu Thr Ala Asn Gln Thr Leu Met Gly Gln Thr
        500                 505                 510

tcc caa gtc gac tgg aag gac cat ttt ctg tac tgt gcc aat gcc ccg     1643
Ser Gln Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala Pro
    515                 520                 525

ctc acc ttc aag gat ggc aca gcc ctg gcc ctg agc tgc atg gct gac     1691
Leu Thr Phe Lys Asp Gly Thr Ala Leu Ala Leu Ser Cys Met Ala Asp
530                 535                 540                 545

tac ggg gcc cct gtc ttc ccc ttc ctt gcc att ggg ggg tac aaa gga     1739
Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Ile Gly Gly Tyr Lys Gly
                550                 555                 560

aag gac tat tct gag gca gag gcc ctg atc atg acg ttc tcc ctc aac     1787
Lys Asp Tyr Ser Glu Ala Glu Ala Leu Ile Met Thr Phe Ser Leu Asn
            565                 570                 575

aat tac cct gcc ggg gac ccc cgt ctg gcc cag gcc aag ctg tgg gag     1835
Asn Tyr Pro Ala Gly Asp Pro Arg Leu Ala Gln Ala Lys Leu Trp Glu
        580                 585                 590

gag gcc ttc tta gag gaa atg cga gcc ttc cag cgt cgg atg gct ggc     1883
Glu Ala Phe Leu Glu Glu Met Arg Ala Phe Gln Arg Arg Met Ala Gly
    595                 600                 605

atg ttc cag gtc acg ttc atg gct gag cgc tct ctg gaa gac gag atc     1931
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Met Phe Gln Val Thr Phe Met Ala Glu Arg Ser Leu Glu Asp Glu Ile
610                 615                 620                 625

aat cgc acc aca gct gaa gac ctg ccc atc ttt gcc acc agc tac att      1979
Asn Arg Thr Thr Ala Glu Asp Leu Pro Ile Phe Ala Thr Ser Tyr Ile
                630                 635                 640

gtc ata ttc ctg tac atc tct ctg gcc ctg ggc agc tat tcc agc tgg      2027
Val Ile Phe Leu Tyr Ile Ser Leu Ala Leu Gly Ser Tyr Ser Ser Trp
            645                 650                 655

agc cga gtg atg gtg gac tcc aag gcc acg ctg ggc ctc ggc ggg gtg      2075
Ser Arg Val Met Val Asp Ser Lys Ala Thr Leu Gly Leu Gly Gly Val
        660                 665                 670

gcc gtg gtc ctg gga gca gtc atg gct gcc atg ggc ttc ttc tcc tac      2123
Ala Val Val Leu Gly Ala Val Met Ala Ala Met Gly Phe Phe Ser Tyr
    675                 680                 685

ttg ggt atc cgc tcc tcc ctg gtc atc ctg caa gtg gtt cct ttc ctg      2171
Leu Gly Ile Arg Ser Ser Leu Val Ile Leu Gln Val Val Pro Phe Leu
690                 695                 700                 705

gtg ctg tcc gtg ggg gct gat aac atc ttc atc ttt gtt ctc gag tac      2219
Val Leu Ser Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu Tyr
                710                 715                 720

cag agg ctg ccc cgg agg cct ggg gag cca cga gag gtc cac att ggg      2267
Gln Arg Leu Pro Arg Arg Pro Gly Glu Pro Arg Glu Val His Ile Gly
            725                 730                 735

cga gcc cta ggc agg gtg gct ccc agc atg ctg ttg tgc agc ctc tct      2315
Arg Ala Leu Gly Arg Val Ala Pro Ser Met Leu Leu Cys Ser Leu Ser
        740                 745                 750

gag gcc atc tgc ttc ttc cta ggg gcc ctg acc ccc atg cca gct gtg      2363
Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Pro Met Pro Ala Val
    755                 760                 765

cgg acc ttt gcc ctg acc tct ggc ctt gca gtg atc ctt gac ttc ctc      2411
Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Val Ile Leu Asp Phe Leu
770                 775                 780                 785

ctg cag atg tca gcc ttt gtg gcc ctg ctc tcc ctg gac agc aag agg      2459
Leu Gln Met Ser Ala Phe Val Ala Leu Leu Ser Leu Asp Ser Lys Arg
                790                 795                 800

cag gag gcc tcc cgg ttg gac gtc tgc tgc tgt gtc aag ccc cag gag      2507
Gln Glu Ala Ser Arg Leu Asp Val Cys Cys Cys Val Lys Pro Gln Glu
            805                 810                 815

ctg ccc ccg cct ggc cag gga gag ggg ctc ctg ctt ggc ttc ttc caa      2555
Leu Pro Pro Pro Gly Gln Gly Glu Gly Leu Leu Leu Gly Phe Phe Gln
        820                 825                 830

aag gct tat gcc ccc ttc ctg ctg cac tgg atc act cga ggt gtt gtg      2603
Lys Ala Tyr Ala Pro Phe Leu Leu His Trp Ile Thr Arg Gly Val Val
    835                 840                 845

ctg ctg ctg ttt ctc gcc ctg ttc gga gtg agc ctc tac tcc atg tgc      2651
Leu Leu Leu Phe Leu Ala Leu Phe Gly Val Ser Leu Tyr Ser Met Cys
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850                 855                 860                 865

cac atc agc gtg gga ctg gac cag gag ctg gcc ctg ccc aag gac tcg     2699
His Ile Ser Val Gly Leu Asp Gln Glu Leu Ala Leu Pro Lys Asp Ser
                870                 875                 880

tac ctg ctt gac tat ttc ctc ttt ctg aac cgc tac ttc gag gtg ggg     2747
Tyr Leu Leu Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Phe Glu Val Gly
            885                 890                 895

gcc ccg gtg tac ttt gtt acc acc ttg ggc tac aac ttc tcc agc gag     2795
Ala Pro Val Tyr Phe Val Thr Thr Leu Gly Tyr Asn Phe Ser Ser Glu
        900                 905                 910

gct ggg atg aat gcc atc tgc tcc agt gca ggc tgc aac aac ttc tcc     2843
Ala Gly Met Asn Ala Ile Cys Ser Ser Ala Gly Cys Asn Asn Phe Ser
    915                 920                 925

ttc acc cag aag atc cag tat gcc aca gag ttc cct gag cag tct tac     2891
Phe Thr Gln Lys Ile Gln Tyr Ala Thr Glu Phe Pro Glu Gln Ser Tyr
930                 935                 940                 945

ctg gcc atc cct gcc tcc tcc tgg gtg gat gac ttc att gac tgg ctg     2939
Leu Ala Ile Pro Ala Ser Ser Trp Val Asp Asp Phe Ile Asp Trp Leu
                950                 955                 960

acc ccg tcc tcc tgc tgc cgc ctt tat ata tct ggc ccc aat aag gac     2987
Thr Pro Ser Ser Cys Cys Arg Leu Tyr Ile Ser Gly Pro Asn Lys Asp
            965                 970                 975

aag ttc tgc ccc tcg acc gtc aac tct ctg aac tgc cta aag aac tgc     3035
Lys Phe Cys Pro Ser Thr Val Asn Ser Leu Asn Cys Leu Lys Asn Cys
        980                 985                 990

atg agc atc acg atg ggc tct  gtg agg ccc tcg gtg  gag cag ttc cat   3083
Met Ser Ile Thr Met Gly Ser  Val Arg Pro Ser Val  Glu Gln Phe His
    995                 1000                1005

aag  tat ctt ccc tgg ttc  ctg aac gac cgg ccc  aac atc aaa tgt      3128
Lys  Tyr Leu Pro Trp Phe  Leu Asn Asp Arg Pro  Asn Ile Lys Cys
1010                1015                1020

ccc  aaa ggc ggc ctg gca  gca tac agc acc tct  gtg aac ttg act      3173
Pro  Lys Gly Gly Leu Ala  Ala Tyr Ser Thr Ser  Val Asn Leu Thr
1025                1030                1035

tca  gat ggc cag gtt tta  gac aca gtt gcc att  ctg tca ccc agg      3218
Ser  Asp Gly Gln Val Leu  Asp Thr Val Ala Ile  Leu Ser Pro Arg
1040                1045                1050

ctg  gag tac agt ggc aca  atc tcg gct cac tgc  aac ctc tac ctc      3263
Leu  Glu Tyr Ser Gly Thr  Ile Ser Ala His Cys  Asn Leu Tyr Leu
1055                1060                1065

ctg  gat tca gcc tcc agg  ttc atg gcc tat cac  aag ccc ctg aaa      3308
Leu  Asp Ser Ala Ser Arg  Phe Met Ala Tyr His  Lys Pro Leu Lys
1070                1075                1080

aac  tca cag gat tac aca  gaa gct ctg cgg gca  gct cga gag ctg      3353
Asn  Ser Gln Asp Tyr Thr  Glu Ala Leu Arg Ala  Ala Arg Glu Leu
1085                1090                1095
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gca  gcc aac atc act gct  gac ctg cgg aaa gtg  cct gga aca gac      3398
Ala  Ala Asn Ile Thr Ala  Asp Leu Arg Lys Val  Pro Gly Thr Asp
1100                 1105                 1110

ccg  gct ttt gag gtc ttc  ccc tac acg atc acc  aat gtg ttt tat      3443
Pro  Ala Phe Glu Val Phe  Pro Tyr Thr Ile Thr  Asn Val Phe Tyr
1115                 1120                 1125

gag  cag tac ctg acc atc  ctc cct gag ggg ctc  ttc atg ctc agc      3488
Glu  Gln Tyr Leu Thr Ile  Leu Pro Glu Gly Leu  Phe Met Leu Ser
1130                 1135                 1140

ctc  tgc ctt gtg ccc acc  ttc gct gtc tcc tgc  ctc ctg ctg ggc      3533
Leu  Cys Leu Val Pro Thr  Phe Ala Val Ser Cys  Leu Leu Leu Gly
1145                 1150                 1155

ctg  gac ctg cgc tcc ggc  ctc ctc aac ctg ctc  tcc att gtc atg      3578
Leu  Asp Leu Arg Ser Gly  Leu Leu Asn Leu Leu  Ser Ile Val Met
1160                 1165                 1170

atc  ctc gtg gac act gtc  ggc ttc atg gcc ctg  tgg ggc atc agt      3623
Ile  Leu Val Asp Thr Val  Gly Phe Met Ala Leu  Trp Gly Ile Ser
1175                 1180                 1185

tac  aat gct gtg tcc ctc  atc aac ctg gtc tcg  gcg gtg ggc atg      3668
Tyr  Asn Ala Val Ser Leu  Ile Asn Leu Val Ser  Ala Val Gly Met
1190                 1195                 1200

tct  gtg gag ttt gtg tcc  cac att acc cgc tcc  ttt gcc atc agc      3713
Ser  Val Glu Phe Val Ser  His Ile Thr Arg Ser  Phe Ala Ile Ser
1205                 1210                 1215

acc  aag ccc acc tgg ctg  gag agg gcc aaa gag  gcc acc atc tct      3758
Thr  Lys Pro Thr Trp Leu  Glu Arg Ala Lys Glu  Ala Thr Ile Ser
1220                 1225                 1230

atg  gga agt gcg gtg ttt  gca ggt gtg gcc atg  acc aac ctg cct      3803
Met  Gly Ser Ala Val Phe  Ala Gly Val Ala Met  Thr Asn Leu Pro
1235                 1240                 1245

ggc  atc ctt gtc ctg ggc  ctc gcc aag gcc cag  ctc att cag atc      3848
Gly  Ile Leu Val Leu Gly  Leu Ala Lys Ala Gln  Leu Ile Gln Ile
1250                 1255                 1260

ttc  ttc ttc cgc ctc aac  ctc ctg atc act ctg  ctg ggc ctg ctg      3893
Phe  Phe Phe Arg Leu Asn  Leu Leu Ile Thr Leu  Leu Gly Leu Leu
1265                 1270                 1275

cat  ggc ttg gtc ttc ctg  ccc gtc atc ctc agc  tac gtg ggg cct      3938
His  Gly Leu Val Phe Leu  Pro Val Ile Leu Ser  Tyr Val Gly Pro
1280                 1285                 1290

gac  gtt aac ccg gct ctg  gca ctg gag cag aag  cgg gct gag gag      3983
Asp  Val Asn Pro Ala Leu  Ala Leu Glu Gln Lys  Arg Ala Glu Glu
1295                 1300                 1305

gcg  gtg gca gca gtc atg  gtg gcc tct tgc cca  aat cac ccc tcc      4028
Ala  Val Ala Ala Val Met  Val Ala Ser Cys Pro  Asn His Pro Ser
1310                 1315                 1320
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cga  gtc tcc aca gct gac  aac atc tat gtc aac  cac agc ttt gaa      4073
Arg  Val Ser Thr Ala Asp  Asn Ile Tyr Val Asn  His Ser Phe Glu
1325                 1330                 1335

ggt  tct atc aaa ggt gct  ggt gcc atc agc aac  ttc ttg ccc aac      4118
Gly  Ser Ile Lys Gly Ala  Gly Ala Ile Ser Asn  Phe Leu Pro Asn
1340                 1345                 1350

aat  ggg cgg cag ttc tga tacagccaga ggccctgtct aggctctatg          4166
Asn  Gly Arg Gln Phe
1355

gccctgaacc aaagggttat ggggatcttc cttgtgactg ccccttgaca cacgccctcc   4226

tcaaatccta ggggaggcca ttcccatgag actgcctgtc actggaggat ggcctgctct   4286

tgaggtatcc aggcagcacc actgatggct cctctgctcc catagtgggt ccccagtttc   4346

caagtcacct aggccttggg cagtgcctcc tcctgggcct gggtctggaa gttggcagga   4406

acagacacac tccatgtttg tcccacactc actcactttc ctaggagccc acttctcatc   4466

caacttttcc cttctcagtt cctctctcga aagtcttaat tctgtgtcag taagtcttta   4526

acacgtagca gtgtccctga gaacacagac aatgaccact accctgggtg tgatatcaca   4586

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agccactccc tccagggcgc acctgcaggt ctgccatcca cggccttttc tggcaagaga   4706

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aaggctgttg ctgccagtca aggccaccca ggagtctgaa ggctgggagc tcttggggct   4886

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gagcttttgg acagctctcc agaagcatga actgcagtgg agatgaagat cctggctctg   5006

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            20                  25                  30

Cys Ala Phe Tyr Asp Glu Cys Gly Lys Asn Pro Glu Leu Ser Gly Ser
        35                  40                  45

Leu Met Thr Leu Ser Asn Val Ser Cys Leu Ser Asn Thr Pro Ala Arg
    50                  55                  60

Lys Ile Thr Gly Asp His Leu Ile Leu Leu Gln Lys Ile Cys Pro Arg
65                  70                  75                  80

Leu Tyr Thr Gly Pro Asn Thr Gln Ala Cys Cys Ser Ala Lys Gln Leu
                85                  90                  95

Val Ser Leu Glu Ala Ser Leu Ser Ile Thr Lys Ala Leu Leu Thr Arg
            100                 105                 110

Cys Pro Ala Cys Ser Asp Asn Phe Val Asn Leu His Cys His Asn Thr
        115                 120                 125

Cys Ser Pro Asn Gln Ser Leu Phe Ile Asn Val Thr Arg Val Ala Gln
    130                 135                 140

Leu Gly Ala Gly Gln Leu Pro Ala Val Val Ala Tyr Glu Ala Phe Tyr
145                 150                 155                 160

Gln His Ser Phe Ala Glu Gln Ser Tyr Asp Ser Cys Ser Arg Val Arg
                165                 170                 175

Val Pro Ala Ala Ala Thr Leu Ala Val Gly Thr Met Cys Gly Val Tyr
            180                 185                 190

Gly Ser Ala Leu Cys Asn Ala Gln Arg Trp Leu Asn Phe Gln Gly Asp
        195                 200                 205

Thr Gly Asn Gly Leu Ala Pro Leu Asp Ile Thr Phe His Leu Leu Glu
    210                 215                 220

Pro Gly Gln Ala Val Gly Ser Gly Ile Gln Pro Leu Asn Glu Gly Val
225                 230                 235                 240

Ala Arg Cys Asn Glu Ser Gln Gly Asp Asp Val Ala Thr Cys Ser Cys
                245                 250                 255

Gln Asp Cys Ala Ala Ser Cys Pro Ala Ile Ala Arg Pro Gln Ala Leu
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260 265 270

Asp Ser Thr Phe Tyr Leu Gly Gln Met Pro Gly Ser Leu Val Leu Ile
275 280 285

Ile Ile Leu Cys Ser Val Phe Ala Val Val Thr Ile Leu Leu Val Gly
290 295 300

Phe Arg Val Ala Pro Ala Arg Asp Lys Ser Lys Met Val Asp Pro Lys
305 310 315 320

Lys Gly Thr Ser Leu Ser Asp Lys Leu Ser Phe Ser Thr His Thr Leu
325 330 335

Leu Gly Gln Phe Phe Gln Gly Trp Gly Thr Trp Val Ala Ser Trp Pro
340 345 350

Leu Thr Ile Leu Val Leu Ser Val Ile Pro Val Val Ala Leu Ala Ala
355 360 365

Gly Leu Val Phe Thr Glu Leu Thr Thr Asp Pro Val Glu Leu Trp Ser
370 375 380

Ala Pro Asn Ser Gln Ala Arg Ser Glu Lys Ala Phe His Asp Gln His
385 390 395 400

Phe Gly Pro Phe Phe Arg Thr Asn Gln Val Ile Leu Thr Ala Pro Asn
405 410 415

Arg Ser Ser Tyr Arg Tyr Asp Ser Leu Leu Leu Gly Pro Lys Asn Phe
420 425 430

Ser Gly Ile Leu Asp Leu Asp Leu Leu Leu Glu Leu Leu Glu Leu Gln
435 440 445

Glu Arg Leu Arg His Leu Gln Val Trp Ser Pro Glu Ala Gln Arg Asn
450 455 460

Ile Ser Leu Gln Asp Ile Cys Tyr Ala Pro Leu Asn Pro Asp Asn Thr
465 470 475 480

Ser Leu Tyr Asp Cys Cys Ile Asn Ser Leu Leu Gln Tyr Phe Gln Asn
485 490 495

Asn Arg Thr Leu Leu Leu Leu Thr Ala Asn Gln Thr Leu Met Gly Gln
500 505 510

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Thr Ser Gln Val Asp Trp Lys Asp His Phe Leu Tyr Cys Ala Asn Ala
        515                 520                 525

Pro Leu Thr Phe Lys Asp Gly Thr Ala Leu Ala Leu Ser Cys Met Ala
    530                 535                 540

Asp Tyr Gly Ala Pro Val Phe Pro Phe Leu Ala Ile Gly Gly Tyr Lys
545                 550                 555                 560

Gly Lys Asp Tyr Ser Glu Ala Glu Ala Leu Ile Met Thr Phe Ser Leu
                565                 570                 575

Asn Asn Tyr Pro Ala Gly Asp Pro Arg Leu Ala Gln Ala Lys Leu Trp
            580                 585                 590

Glu Glu Ala Phe Leu Glu Glu Met Arg Ala Phe Gln Arg Arg Met Ala
        595                 600                 605

Gly Met Phe Gln Val Thr Phe Met Ala Glu Arg Ser Leu Glu Asp Glu
    610                 615                 620

Ile Asn Arg Thr Thr Ala Glu Asp Leu Pro Ile Phe Ala Thr Ser Tyr
625                 630                 635                 640

Ile Val Ile Phe Leu Tyr Ile Ser Leu Ala Leu Gly Ser Tyr Ser Ser
                645                 650                 655

Trp Ser Arg Val Met Val Asp Ser Lys Ala Thr Leu Gly Leu Gly Gly
            660                 665                 670

Val Ala Val Val Leu Gly Ala Val Met Ala Ala Met Gly Phe Phe Ser
        675                 680                 685

Tyr Leu Gly Ile Arg Ser Ser Leu Val Ile Leu Gln Val Val Pro Phe
    690                 695                 700

Leu Val Leu Ser Val Gly Ala Asp Asn Ile Phe Ile Phe Val Leu Glu
705                 710                 715                 720

Tyr Gln Arg Leu Pro Arg Arg Pro Gly Glu Pro Arg Glu Val His Ile
                725                 730                 735

Gly Arg Ala Leu Gly Arg Val Ala Pro Ser Met Leu Leu Cys Ser Leu
            740                 745                 750
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Ser Glu Ala Ile Cys Phe Phe Leu Gly Ala Leu Thr Pro Met Pro Ala
        755                 760                 765

Val Arg Thr Phe Ala Leu Thr Ser Gly Leu Ala Val Ile Leu Asp Phe
    770                 775                 780

Leu Leu Gln Met Ser Ala Phe Val Ala Leu Leu Ser Leu Asp Ser Lys
785                 790                 795                 800

Arg Gln Glu Ala Ser Arg Leu Asp Val Cys Cys Cys Val Lys Pro Gln
                805                 810                 815

Glu Leu Pro Pro Pro Gly Gln Gly Glu Gly Leu Leu Leu Gly Phe Phe
            820                 825                 830

Gln Lys Ala Tyr Ala Pro Phe Leu Leu His Trp Ile Thr Arg Gly Val
        835                 840                 845

Val Leu Leu Leu Phe Leu Ala Leu Phe Gly Val Ser Leu Tyr Ser Met
    850                 855                 860

Cys His Ile Ser Val Gly Leu Asp Gln Glu Leu Ala Leu Pro Lys Asp
865                 870                 875                 880

Ser Tyr Leu Leu Asp Tyr Phe Leu Phe Leu Asn Arg Tyr Phe Glu Val
                885                 890                 895

Gly Ala Pro Val Tyr Phe Val Thr Thr Leu Gly Tyr Asn Phe Ser Ser
            900                 905                 910

Glu Ala Gly Met Asn Ala Ile Cys Ser Ser Ala Gly Cys Asn Asn Phe
        915                 920                 925

Ser Phe Thr Gln Lys Ile Gln Tyr Ala Thr Glu Phe Pro Glu Gln Ser
    930                 935                 940

Tyr Leu Ala Ile Pro Ala Ser Ser Trp Val Asp Asp Phe Ile Asp Trp
945                 950                 955                 960

Leu Thr Pro Ser Ser Cys Cys Arg Leu Tyr Ile Ser Gly Pro Asn Lys
                965                 970                 975

Asp Lys Phe Cys Pro Ser Thr Val Asn Ser Leu Asn Cys Leu Lys Asn
            980                 985                 990
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Cys Met Ser Ile Thr Met Gly Ser Val Arg Pro Ser Val Glu Gln Phe
995 1000 1005

His Lys Tyr Leu Pro Trp Phe Leu Asn Asp Arg Pro Asn Ile Lys
1010 1015 1020

Cys Pro Lys Gly Gly Leu Ala Ala Tyr Ser Thr Ser Val Asn Leu
1025 1030 1035

Thr Ser Asp Gly Gln Val Leu Asp Thr Val Ala Ile Leu Ser Pro
1040 1045 1050

Arg Leu Glu Tyr Ser Gly Thr Ile Ser Ala His Cys Asn Leu Tyr
1055 1060 1065

Leu Leu Asp Ser Ala Ser Arg Phe Met Ala Tyr His Lys Pro Leu
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Lys Asn Ser Gln Asp Tyr Thr Glu Ala Leu Arg Ala Ala Arg Glu
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Leu Ala Ala Asn Ile Thr Ala Asp Leu Arg Lys Val Pro Gly Thr
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Asp Pro Ala Phe Glu Val Phe Pro Tyr Thr Ile Thr Asn Val Phe
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Ser Leu Cys Leu Val Pro Thr Phe Ala Val Ser Cys Leu Leu Leu
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Gly Leu Asp Leu Arg Ser Gly Leu Leu Asn Leu Leu Ser Ile Val
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Met Ile Leu Val Asp Thr Val Gly Phe Met Ala Leu Trp Gly Ile
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Ser Tyr Asn Ala Val Ser Leu Ile Asn Leu Val Ser Ala Val Gly
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Met Ser Val Glu Phe Val Ser His Ile Thr Arg Ser Phe Ala Ile
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Ser Thr Lys Pro Thr Trp Leu Glu Arg Ala Lys Glu Ala Thr Ile

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Ser Met Gly Ser Ala Val Phe Ala Gly Val Ala Met Thr Asn Leu
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Pro Gly Ile Leu Val Leu Gly Leu Ala Lys Ala Gln Leu Ile Gln
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Ile Phe Phe Phe Arg Leu Asn Leu Leu Ile Thr Leu Leu Gly Leu
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Leu His Gly Leu Val Phe Leu Pro Val Ile Leu Ser Tyr Val Gly
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Pro Asp Val Asn Pro Ala Leu Ala Leu Glu Gln Lys Arg Ala Glu
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Glu Ala Val Ala Ala Val Met Val Ala Ser Cys Pro Asn His Pro
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Ser Arg Val Ser Thr Ala Asp Asn Ile Tyr Val Asn His Ser Phe
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